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CLINICAL LECTURE.

CONSUMPTION AND EMPHYSEMA—PLEURITIC EFFUSION—RHEUMATIC NEURITIS.

BY WILLIAM PEPPER, M. D., PHILA.,
PROFESSOR OF CLINICAL MEDICINE NIVERSITY OF PENNSYLVANIA.

CONSUMPTION AND EMPHYSEMA.

Gentlemen:—The first case that I shall call to your notice to-day, is that of a man of about forty years old. Until two years ago he has enjoyed fairly good health, when he caught cold, and had a persistent cough which lasted for several months. He also expectorated a large amount of purulent sputa, of a yellowish color. These symptoms, however, began to improve until in January of this year he took a fresh cold. The symptoms all became aggravated. The patient's cough increased, he raised a considerable amount of blood, his appetite failed him almost completely, and he gradually grew weaker and weaker. There were no night sweats.

Regarding the physical signs of this patient, we first notice that the color of his face is good. His finger nails are somewhat large and bulbous. This point alone has considerable diagnostic value, for these peculiar finger nails are often met with in cases of long standing lung trouble, and more frequently in chronic phthisis than in any other disease. The patient says that the trouble has always been on the left side. His sputa contains tubercle bacilli. In comparing the movements of each side of the chest, it will be seen that the right side expands more than the left.

You see that with very little effort we have already observed several important physical signs which will materially assist us in forming a diagnosis, as well as prognosis. These are the good color of the complexion, the peculiarity of the finger nails, and the decrease of chest expansion on the left side.

I cannot too strongly impress upon you the vast importance of carefully noting even the apparently most insignificant physical signs. The very one which we will perhaps regard as the least important, may be the very one that will ultimately give us a clue to the diagnosis. Physical diagnosis is, therefore, of the greatest importance, and cannot be too carefully studied. After your student life is over and you are well on in active practice, you will find that each year will unfold new truths to you, you will learn to attach greater importance to each physical sign, and you will after all feel convinced that nature is only beginning to unfold her mysteries to you.

Note once more, therefore, these physical signs. The right side of the chest moves more freely than the left. To make sure of this we practice palpation: laying our open hands over the chest. We can in this way feel the difference of expansion even more distinctly than we can see it. Our attention is also called to a marked pulsation in the epigastric region, which strongly simulates the thrill of an aneurism. Auscultation shows us that the pulsation is stronger here than over the heart. All these signs are most deceptive, the chances that they are due to real aneurism being not more than one in fifty. In all probability it is merely an abnormal pulsation of the healthy aorta.

In such cases we have no right to conclude that the patient is suffering from aneurism unless, also, there are evidences of tumor. But why have we this pulsation? Such a pulsation is likely to occur in cases of enlarged heart, when the right ventricle, which may be either over-charged, dilated or hypertrophied, rests against the diaphragm. In pleuritic effusions this same epigastric pulsation is observed. In this case, when the patient leans forward I can hear his heart pulsate in its normal region,

but when the patient is erect the epigastric pulsation is strong and the heart over its normal region becomes almost inaudible.

This shows that while the heart is acting feebly, yet that it is not displaced to the right. The probabilities are, in this case, that this epigastric pulsation is due to an enlarged right ventricle. We will now see what percussion will develop. There is a great deal of resonance here, the liver dullness does not begin until some distance below the normal line. On the left side we find an area of impaired lung reaching from the nipple to the heart dullness. Posteriorly, there is resonance everywhere. Let us now try auscultation. We find interesting tubercular breathing over the position of the primary bronchus. Over the area of dullness there is marked bronchial breathing both in expiration and inspiration. There are a few râles.

The patient has a pleural effusion on the left side. This would be the usual conclusion also from the visible examination, but it is disproved by finding a distended right heart laying on the diaphragm. Percussion over the right side was negative; but over the left nipple an area of dullness was found, that is to say, that the lower portion of the upper lobe, and the upper portion of the lower lobe is affected. Dullness in this region is rare; what can it be? I have seen similar dullness between the outside of the pericardium and the lung, but in this case no such condition exists. Here we have partial consolidation, increased respiration and increased vocal fremitus. Percussion and auscultation have elicited also another interesting symptom, namely, an enlarged right bronchus, in fact there is a cavity in the right bronchus caused by its enlargement. Without doubt this man's trouble was at first merely bronchial. You will remember, also, that we found his liver displaced downwards. The right lung is emphysematous and its limits are increased. Since January last, the man says, that he has been steadily losing flesh and growing worse, he having taken fresh cold—in other words he became tuberculous. This is the reason why, although ill so long, he still looks comparatively well, namely, he has not been affected with tuberculosis prior to last January. I think that it is a good thing for this man that his lung trouble is where it is and not at the apex of the lung, for, for some unknown reason, the apex heals much more slowly than any other part of the lung. Let me, however, warn you against making any too favorable prognosis in cases of this kind. Emphysema is not such a bad thing for a tuberculous subject to have. It is an undoubted fact that tuberculosis does not spread so rapidly in emphysematous subjects as in others; but the presence of the emphysema is often apt to mislead us, and lead us to believe that the lung is healthy where it is really diseased. The mistake is made by the emphysema giving rise to resonance or percussion over portions of the lung where really there may be nodules or even partial consolidation. And so while the apparent physical signs of your patient may be favorable, yet extensive disease may exist and you will be surprised at the sudden way in which your patient will grow worse and finally die. It is well, therefore, always to add, in these cases, a possible 33 per cent. to the extent of the pulmonary disease. Therefore, be guarded in your prognosis.

PLEURITIC EFFUSION.

The next patient is a young man suffering from pleuritic effusion. About two months ago about 55 fluid ounces of serum were drawn off. The patient's breath smells strongly of decomposed pus. His temperature has been very eratic, a hectic fever existing most of the time. He had been discharged but came in again a short time since with new evidences of pleuritic effusion. He coughs a good deal, and spits up a large quantity of pus. This time there is an effusion on both sides of the chest, but the contents of the chest is pus, and not serum. This pus has caused a softening of the pleura and a fistula communicating with the lung has formed. This accounts for the pus in the sputa. But as the pus goes out through this fistula, the air comes in, and we therefore have a case of pyo-pneumothorax. Since the patient has been in the Hospital this time, 48 ounces of pus have been drawn from the right side. There is still a large amount of liquid in the chest, capable of producing flatness and tympani. As I move the patient about I can hear the pus splashing with a metallic splash, that only exists when there is air in the pleural cavity. While the case is undoubtedly one of pyo-pneumo-thorax, we also observe that his finger nails are bulbous, and that the flesh is livid around the matrix. As I have said before in this lecture, this condition of the finger nails is of great diagnostic value. But, while the indications in this patient point toward tuberculosis, yet no tubercle bacilli have been found in his sputa. After all, while we may have many symptoms pointing toward tuberculosis, yet, its actual

existence can be always proved by the presence of the tubercle bacillis.

The patient's left side is best let alone, but what can we do for his right side? If I felt certain about subsequent healing, I would insert a drainage tube in this side, but the condition of the left side makes me hesitate. I shall therefore wait awhile. In this case the prognosis is, of course, very unfavorable.

RHEUMATIC NEURITIS.

This woman is forty-two years old; she is married, and has three children. Until five years ago she has always been well, indeed, her general health is good, even now, and she is robustly built. She says that for the last four or five years she has been hoarse, and that she has had severe pains in the knee, and that her legs became swollen. Lately her arms have also swollen, become stiff and given her much pain. The case has been one of rheumatic peri-neuritis. You see that her elbow joints are very stiff. This patient should have daily movements of these limbs so that mobility may be restored. My movements of the arm cause the patient evident pain, and the procedure looks cruel; but in reality it is not cruel, for if this were not done the joints would increase in stiffness, and finally an atrophy of the muscle takes place, leaving the woman with a useless limb. On examining her limbs, I find on the left side of the tibia a thickened lesion. This can only be of a specific origin, and the laryngitis that she complains of, confirms this. Regarding the best treatment to be followed, we will give an ointment composed of equal parts of lanolin, nitrate of mercury, and cosmoline. Internally we will give her iodide of mercury.

THE THERAPY OF DIPHTHERIA.

BY F. LOEFFLER, M. D.,

PROFESSOR OF DISEASES OF CHILDREN, UNIVERSITY OF GRIEFSWALD, GERMANY.

Gentlemen:—The number of remedies which are recommended in the treatment of diphtheria have, during the course of the last few years, become truly legion. Nitrate of silver, mercurial salts, chloride of iron, carbolic acid, chlorine, bromine and iodine, chlorate of potash, permanganate of potash, lime water, turpentine, chinolin, papaiotin, and even yeast, are among the remedies for which their several upholders have claimed superiority; and yet, in the face of all this, there is no one remedy that has merited a general acknowledgment, or found general use.

The majority of physicians have used this or that remedy with good results and have become accustomed to it. By good results I mean that their patients have recovered. Until sooner or later they come across a severe case in which their remedy fails them completely, and they then bestir themselves to find some other curative agent of greater efficacy. The cure of diphtheria still remains a problem of medicine waiting to be solved.

How comes it, we ask ourselves, that the therapy of diphtheria has not yet been placed upon a firm basis? The answer is easily given. Up to the present time an accurate knowledge of the cause of diphtheria is wanting, and, therefore, systematic, scientific and experimental tests of the various remedies recommended in the treatment of this disease are impossible. The only test we have for the value of these various remedies is a statistical one, and in no disease so much as diphtheria, are these statistics so little to be depended upon. Many conscientious physicians frequently report under the name of diphtheria, simple inflammation of the tonsils and pharynx with a slight exudation. Granted that many of the successful cases reported are of the above class, it will at once be appreciated how delusive and misleading such statistics are.

The problem before the investigator is to find the disease germ or cause. This problem has now finally been solved. The morphologically- and biologically-characteristic bacillus, I have found, is the etiological germ of diphtheria.

In this bacillus of diphtheria we have the object upon which the various remedies may be tried. "Not with human beings, but with the parasites in pure cultures should we experiment," said Koch in his address before the Tenth International Medical Congress in Berlin. So, guided by this thought, I for some time studied the actions of various chemicals on the bacillus of diphtheria, and those which I found experimentally successful have also been of great service to me in treating the disease in the human subject, and it gives me pleasure to briefly report the results to you to-day.

The chemical actions of various agents upon the bacillus of diphtheria, have been already studied by many investigators. Their methods of procedure have been varied. D'Espine and de Marignac, placed

4 cubic centigrammes of the solution they wished to test in a test tube, after previous sterilization of the solution, then a portion of a pure culture of the bacilli was added and the contents of the test tube and shaken up. Portions of this culture, thus treated, were then placed in blood serum in order to see whether the germs which had come in contact with the chemical agency were dead or not. One drop of the solution was always placed in the serum with the culture. The contact of the bacillus with the solution was longer than five minutes.

Babes has a different method. In one series of experiments he would allow the coagulated surface of blood serum to come in contact for several minutes with various chemical substances, and then inoculate the surface with diphtheria bacilli. In another series he would first inoculate the serum from a pure culture of the bacilli, and then half an hour later, would wash the surface of the serum with various antiseptic substances for the space of five minutes.

Boer and Behring chose a weakly alkaline beef bouillon, prepared with peptons and salt, and inoculated this with the bacillus. They confirmed, first, in what quantity of bouillon would one gramme of the fluid that was being tested, after the mixture had stood two days, cause a decrease of the bacilli; secondly, in what quantity of freshly inoculated bouillon, and in what quantity of bouillon which had been inoculated for 24 hours, would one gramme of the fluid to be tested cause the death of the bacilli in the culture.

The results obtained by these various investigations differ materially, on account of the varied methods employed. At the outset of my experiments, I endeavored to make them of as practical value as possible, so that the results might be directly applicable to subsequent practice.

In our fight against this microbe in nature, two points are always before us: Frst, to guard against the colonization of the bacillus, in healthy subjects on the intact mucous membranes, and in diseased individuals on the mucous membrane that has not been as yet infected. This colonization can be hindered if we bring the healthy mucous membrane into contact with some substance which will prevent the growth of the bacilli, or better still, which will kill them, as soon as it is brought into contact with them. Of course these substances cannot be of a nature calculated to injure the mucous membrane, or such that even a continued use of them could give rise to toxic or other unpleasant symptoms. Second, the clusters of developed bacilli in the superficial layers of the pseudo-membrane must be killed, so that no spreading of the infection to parts of the mucous membrane, as yet intact, can take place, and also that no living bacillus may be expelled from the patient's mouth, so that the spread of the disease in other persons may be avoided.

In experimental work the bacilli should be placed in a nutritive substance congenial to them, and in which they will increase rapidly, as is the case when they are in the human mucous membrane. The temperature of the culture should also be such as to facilitate the growth of the germs. I have found the following mixture especially favorable to the growth of the bacilli: 4 parts of beef-blood serum, one pint of neutralized bouillon, 1 per cent. of peptone, 1 per cent. of grape sugar, 0.5 per cent. of common salt, at a temperature of 37.5°C.

Ten cubic centimetres of this serum mixture is placed in a test-tube. The tube is held at an angle so as to allow a larger sur, face to the serum to be exposed to the air until it coagulates. This tube was now inoculated superficially with a fresh culture of the bacillus. In eight hours small colonies could be seen, and in twenty-four hours the whole surface of the serum was covered with a thick layer of the bacilli. Into the freshly inoculated tube, enough of the remedy to be tested was poured to cover the surface of the serum—about 10 to 15 cubic centimetres. The fluid was either immediately poured off again, or else allowed to stay in contact with the serum for ten seconds. The act of gargling can seldom be continued longer than 10 or 30 seconds, and therefore this time was chosen in order to prove the efficacy of the drugs to be employed. The pouring in and out of the fluid did not work off the bacilli.

If a blood-serum culture is allowed to remain undisturbed for several days, it will be found that a thick layer has formed over the serum. This layer corresponds with the colonies of bacilli in the superficial membranous layers in the human subject. After the remedy had been tested upon the superficial culture of the bacilli, it was also tested in cultures several days old, in a similar manner. The time allowed for contact being 20–30 seconds. After the fluid had been poured off, tests were made both from the superficial, and deep layers of the culture.

I discovered, in this way, that while some remedies cause the immediate death of the bacilli in superficial cultures, they have

comparatively little or no effect when the cultures have become thick layers, even when the contact is prolonged, and that in order to produce any effect the remedy had to be used in a concentrated form.

These comparative experiments seem to me, to be of great practical value. They teach us that a prophylactic treatment with weak solutions is not sufficient, but that we must combine these with concentrated applications which will also cause the immediate destruction of the bacilli in the deeper layers.

The remedies which I have tested comprise most of those which have found, or still find, therapeutic application in diphtheria, and also other antiseptics. Some I have subjected to a most careful study, others I have only been able to pay passing attention to.

They are as follows: Bichloride of mercury, cyanide of mercury, metallic mercury, nitrate of silver, chloride of silver dissolved in sub-sulphurate of soda, permanganate of potash, chlorate of potash, saturated lime water, aqueous chlorine solutions, aqueous bromine solutions, aqueous iodine solutions, trichloride of iodine, chlorate of lime solutions, double iodide of potash solutions, alcohol, allyl-alcohol, benzyl-alcohol, ether, chloroform, carbolic acid, salicylic acid, resorcin, hydrochinon, tropæolin, benzol, brenzcatechin, the xyloles, toluol, anisol, phenetol, pseudocumol, oil of turpentine, anilin, thymol, the creosoles, creosol-sulphonic acids, and thirty-eight etheric oils.

The majority of the organic preparations were placed at my disposal by Dr. Limpricht, of our chemical institute, and my thanks are due him.

Bichloride of mercury proved its powerful antiseptic qualities also in killing the tubercle bacillus. Solutions of 1: 10,000 caused immediate sterilization of a superficial culture, and even a solution of 1: 20,000, when brought into contact with the cultures caused the death of nearly all the bacilli, the few remaining ones, however, formed themselves into colonies within a few days. A 1: 2,000 solution, even, when kept in contact with the cultures for twenty seconds, failed to exert any lasting influence upon the deeper layers of the culture. The employment of a 1:1,000 solution caused the disappearance of nearly all the bacilli, and any stronger solution than this caused their complete extermination, even in the deepest layers.

My experiments with the cyanide of mercury were particularly interesting. This drug has been used in the treatment of diphtheria by Hugo Schulz, Erichsen, Rothe, and others. Selldén, of Sweden, has, perhaps, had the most extended experience with it. He has used it in 156 cases of diphtheria, and only lost four, three of which he came too late to relieve.

His treatment consisted in giving a spoonful of the following formula every hour, day and night:

℞

Hydrag cyan.	gramme,	0.02.
Tinct. aconiti	grammes,	2.00.
Mel. crud	"	50.00.
Ag. dest	"	150.00.

M.

For young children 0.1 to 0.4 milligrammes of thecyanide mercury was the dose employed. Then, two to four times during an hour the following gargle was employed:

℞

Hydrag cyan	grammes,	0.04
Ag. menth. pip	"	400.0

Either of these solutions have a strength of 1:10,000. My own experiences have shown that solutions of 1:10,000 exterminate nearly all the germs, although the contact may only be momentary. In solutions of 1:8,000, the sterilization is absolutely complete. The thick cultures were not, however, sterilized even by twenty seconds contact with a 1:1,000 solution, this result being obtainable only when a solution of 1:200 was used. All the same, repeated applications of a 1:1,000 solution will cause subsequent sterilization. Selldén's method of using the solutions every fifteen minutes or half hour, would surely hinder the growth of the bacilli. This treatment, however, will not cause a destruction of the bacilli within the membranes. In one case of diphtheria I was able to trace the bacilli in the membranes (by cultures) after the cyanide of mercury solutions had been used for three weeks.

In my opinion preparations of silver promise excellent results. Nitrate of silver in solutions of 1:1,000, when brought in contact with cultures for one to ten seconds, had a decided action. The serum would remain apparently sterile for about twenty-four hours, then, however, colonies would begin to form again. Stronger solutions of 1:150 caused complete destruction of the bacilli. The same solution had no effect upon cultures, even when kept in contact for twenty seconds.

Fresh chloride of silver, dissolved in subsulphurate of soda, was found by Behring to be very destructive to the gonococcus of gonorrhœa in solutions of 1:7,500. Personally I brought four cases of whooping cough to a

speedy termination by inhalations of a 1:10,000 solution of the chloride. Solutions stronger than 1:5,000 are very irritating. In experimenting with this drug on serum infected with the bacillus of diphtheria, I found that ten seconds contact with solutions of strengths varying from 1:600 to 1:4,000, rendered the serum sterile, while the tubes tested with solutions of 1:5,000 to 1:10,000, developed small colonies the subsequent day. But on the third or fourth day, all the tests contained bacilli. In the tube treated with the 1:600 solution, the colonies were very markedly disseminated, but in the weaker solution a coating of the bacilli had formed over the serum. Indeed this drug showed no superiority to nitrate of silver.

Permanganate of potash in a 1 per cent. solution left enough bacilli to form new colonies within the course of a day. A 2 per cent. solution sterilized the surface of the serum. In order to positively destroy cultures within twenty seconds, a 5 per cent. solution was necessary, although the 3 per cent. solution was very active.

Chlorate of potash, 5 per cent., saturated lime water, peroxide of hydrogen 1 per cent., sulphuric acid 1.25 per cent., and lactic acid 1 per cent., were entirely inactive when kept in contact for 10 seconds.

Iodine in aqueous solutions was inactive, but a solution composed of 5 parts of iodine, 10 parts of iodide of potash, and 300 parts water, sterilized cultures in 20 seconds.

Bromine in 1:300 to 1:500 solutions, sterilized the serum in 10 seconds. The bacilli in cultures were only destroyed after a 20 seconds contact with a 2.5 per cent. solution of bromine.

Chlorine water, containing 0.009 gramme of Cl. to the cubic centimeter (1: 112.7) destroyed the bacilli on the serum, even in weaker solutions (1: 1100) in 10 seconds. The first named solution also sterilized cultures in 20 seconds, but the weaker solutions had but little effect.

Although saturated lime water had been proven inactive, saturated solutions of chlorate of lime were most effective. Fifty parts of chlorate of lime were mixed with 200 parts of water. The filtrate destroyed the bacilli on the serum, even when diluted twenty-five times. The cultures, however, were only destroyed by the undiluted filtrate, in 20 seconds. Weaker solutions were almost inactive.

Behring has recently used trichloride of iodine successfully in treating diphtheria in animals, in a 1:1000 solution. Even a 1:2000 solution has a decided action. My own experiments showed that a 1 per cent. solution exterminates the bacilli in cultures in 20 seconds.

Absolute alcohol destroyed nearly all the germs on the serum surface upon momentary contact, and even a 5 per cent. solution was decidedly active. A mixture of alcohol and ether is especially valuable, and the following mixture I have proved to be most serviceable:

℞

Alcohol	50 parts.
Ether	25 parts.
Water	25 parts.

On cultures, however, both alcohol and ether gave negative results.

Allyl-alcohol gave negative results, while benzyl-alcohol sterilized the inoculated serum in 10 seconds completely. Chloroform water was equally as effectual.

Carbolic acid gave negative results in a 1 per cent. solution. A 3 per cent. or 4 per cent. solution will sterilize the inoculated serum. The addition of a 20–40 per cent. of alcohol, greatly intensified the action of a 2 per cent. solution. Cultures were destroyed in 20 seconds by a 5 per cent. solution. The same results could be accomplished by a 3 per cent. solution, with the addition of 30 per cent. of alcohol.

Lysol, which has been recently introduced into commerce, proved very efficacious. Two per cent. solutions sterilized the inoculated serum in 10 seconds. Cultures, however, were not positively sterilized, even by 20 seconds contact with a 5 per cent. solution.

The kresols were but slightly active. Salicylic acid while active in sterilizing serum inoculations, gave negative results in cultures. Two and five per cent. solutions were employed.

The action of the etherial oils was especially interesting. The majority of these strongly odorous oils contain carbo-hydrogen in the form of C^{10} H^{16} and a few contain oxygen. These actions were extremely varied. The majority of them, however, seemed to check the growth of the bacilli, even by their fumes. Anisol in a five per cent. solution of equal parts of ether and alcohol was very effective. Thymol in steam form was inactive, but in a mixture with 20 per cent. of alcohol, it killed all the bacilli upon contact—even in solutions of 1:500. The direct application of watery solutions of anilin, were active on the serum surfaces. Anisol solutions were inactive. Oil of turpentine, even with the addition of 50 per cent. of alcohol, gave negative re-

sults, but the addition of 2 per cent. of carbolic acid rendered it very active.

Metallic mercury in vapor form, was effective in sterilizing serum surfaces.

So much for my experiments, which, however, are far from being complete. Many of the most active agencies, are unfortunately unsuitable for practical use, on account of their toxic qualities.

For prophylactic treatment of persons exposed to diphtheria, gargling every two or three hours, for 5 or 10 seconds with a suitable solution, is recommended. For this purpose, I have found the following very useful: Bichloride of mercury 1 : 10,000, or 1 : 15,000, or better still, cyanide of mercury in a 1 : 8,000 solution, or 1 : 10,000. The taste of the latter preparation is less unpleasant than that of the former. Chloroform water, or thymol 1 : 500 in 20 per cent. of alcohol, are also useful and agreeable. It is of great importance that the gargling should be done properly and thoroughly. In vapor form, oil of orange peel, lemon oil, eucalyptus oil, anisol, phenetol, benzol and toluol are of service. These are best used, according to Feldbausch's method. A small metallic tube, containing absorbent cotton, moistened with the oil, is inserted in each nostril, and the patient is therefore continually breathing the fumes. These tubes should remain in place as long as the patient is in an atmosphere probably victated with the bacilli of diphtheria. The same oils might also be sprayed or vaporized in the sick room with material advantage. In this way the air would be more or less saturated with the fumes, and, certainly, an atmosphere in which orange peel oil, or lemon oil is suspended, is both pleasant and refreshing.

Regarding the treatment of patients actually suffering from this dread disease, I advocate gargling every one or two hours with weak solutions, and gargling every three or four hours with solutions which will positively destroy the bacilli, even in thick cultures. For the latter purpose I have found the following most practicable: Bichloride of mercury, 1 : 1,000; carbolic acid 3 per cent. solution in 30 per cent. of alcohol, finally equal parts of alcohol and oil of turpentine, with 2 per cent. of carbolic acid. Between the appointed hours for gargling, the parts might be painted with a 5 per cent. solution of carbolic acid, 2 per cent. of bromine, 1 per cent. of chlorine, or with a concentrated watery solution of the kresols, especially *o*-kresol and *p*-kresol.

Bichloride of mercury has been used with the most excellent effects, and also the 3 per cent. solution of carbolic acid in 30 per cent. of alcohol. Under the treatment described above the membranes can be proven to be steril within a few days. The general condition of the patient improves rapidly. Gargling with the carbolic acid solution will at first be unpleasant to the patient, but this soon passes off, and the patient soon becomes accustomed to it. It is to be noted that in diphtheritic scarlet fever the above method of treatment is also very successful.

I trust, that in this brief lecture I have been able to set forth clearly the principles of the modern therapy of diphtheria, based on the most recent researches and extensive experience, and that with the advance of medical knowledge this *bête noir* of medicine may lose many of its horrors, and be able to claim but few victims.

COMMUNICATIONS.

THE AFTER-TREATMENT OF CASES OF ABDOMINAL SECTION.

BY CHARLES P. NOBLE, M. D.,
SURGEON IN CHARGE OF KENSINGTON HOSPITAL FOR WOMEN, PHILADELPHIA.[1]

According to Oliver Wendell Holmes, to successfully treat an individual one should begin with the grandfather. The same principle applies to the successful after-treatment of cases of abdominal section. Whenever possible, careful preparatory treatment should be carried out. Nutrition should be improved, where depraved; the emunctories should be made active, especially the bowels and skin. Operation should be rapid, careful and thorough. Diseased, and especially suppurating, structures should receive most careful attention, and unless vital organs, be completely removed. Asepsis in clean operations, and irrigation and drainage in dirty operations are essentials. Under such conditions, unless operations have been made a last resort, or the vital organs of the individual are seriously crippled, proper after-treatment of cases of abdominal section will insure a successful result, quite uniformly.

That which is accomplished by after-treatment in cases of abdominal section is principally of a negative character. The object is to protect the patient from all

[1] Read by title before the Section on Obstetrics and Gynæcology of the American Medical Association, at Washington, D. C.

sources of harm, while nature does her perfect work. The most positive ends accomplished are: to sustain the power of life to enable the patient to pass a crisis; to keep the emunctories active; and to prevent wound secretions from becoming a source of poison.

The after-treatment of typical cases of abdominal section is extremely simple. By typical cases I mean those in which the operation has been done satisfactorily, without special loss of blood, and in whieh the patient goes to bed without marked shock.

The room in which the patient is to remain should be airy, well lighted, and ventilated. The bed, preferably, should be single, and of such a height that the woven wire matress is two feet above the floor. A hair matress is the best. The bed should be made warm during the operation by having hot water cans or bottles placed in it. These should remain about the patient until reaction is complete—care being taken to avoid burning the patient.

Diet.—During the first twenty-four hours nothing should be given. Rinsing the mouth with water will relieve thirst partly. If thirst is excessive, enemas of beef tea, eight ounces or a pint, may be given every four hours. This should relieve systemic thirst; but it will not relieve thirst due to a dry mouth or throat. On the second day one or two drachms of water every halr hour may be given, to be increased or withheld according to the tolerance of the stomach. After thirty-six or forty-eight hours beef tea, one or two drachms, or an equal amount of milk and lime water or soda water, may be given; and increased if well borne, the frequency of administration being decreased. If all goes well, on the fourth or fifth day water practically *ad libitum* may be given. After a week, soft diet may be given, and after two weeks full diet.

Drainage tube, and the abdominal wound.—In my judgment the drainage tube should be used unless there is some special contra-indication. If the drainage is not excessive, nor bleeding going on, it is best to surround the tube with sterilized cotton; with the bandage over all. In this way the tube is protected against infection between dressings. A rope of bichloride-wet gauze should be passed down the tube to Douglass's pouch, and externally into the absorbent cotton. Used in this way most of the fluid poured out into the pelvis will escape by capillary action, and draining the tube will be unnecessary more than twice or three times in twenty-four hours. In this way the tube can be managed by the surgeon. All soiled cotton should be removed at each dressing, and the outside of the tube be kept aseptic by washing with sublimate solution. It is well also to keep the gauze over the wound wet with bichloride solution until the tube is removed. In draining the tube, the rope of gauze is removed, a pledget of aseptic cotton is seized with an aseptic forceps and passed down the tube. This is repeated until all fluid is removed. When the pelvis has been made dry, it is well to pass one pledget saturated with sublimate solution. The wet sublimate gauze drain is next inserted, and the cotton and bandage readjusted. This method of managing the tube has given perfect satisfaction in typical cases.

Where drainage is excessive or hæmorrhage is going on, it is better to use the rubber dam about the tube, having it project through the bandage. In this way it is more accessible for draining. The chances of infection are also greater. In this class of cases the tube must be drained often—even every fifteen or thirty minutes in case of bleeding. The piston syringe may be used to remove fluid; but I have found it unsatisfactory. It will not remove all fluid from Douglass's pouch.

The tube should be removed when the drainage ceases to saturate the gauze rope in the tube, especially if the drainage has become serous. In most cases the tube will remain in from one to three days. When the tube is removed early, the wound should be closed by tying a provisional stitch introduced during the operation. If for any reason it has been necessary to use the tube five or six days or more, it should be elevated from day to day, perhaps a shorter one substituted, and finally a plug of gauze, inserted through the abdominal wound, be used. In this way a sinus can at times be prevented. In such cases the judicious use of sublimate solution, and the peroxide of hydrogen solution within the tube track is of great value. These agents should be on cotton carried down the tube in the grasp of a forceps.

The hands of the surgeon must be made aseptic before each dressing of the tube, and the tube forceps must be kept aseptic. By having the forceps well nickel plated it can be washed before use in sublimate solution. After use it should be carefully washed with soap and water. With a little practice the surgeon can drain the tube with but little use of his fingers. Only the thumb and forefinger of the left hand need come in contact with the cotton or that part of the

tube forceps which passes down the tube. The method employed is as follows: Small rolls of absorbent cotton are wrapped in tissue paper, and sterilized in the steam sterilizer. A roll of cotton partly unwrapped is held by the nurse, the tissue paper serving to keep her finger from touching the cotton. A pledget of cotton is seized by the tube forceps, lightly wrapped about the forceps by the thumb and index finger of the left hand, and then passed down the tube. It may or may not be necessary to steady the tube. The process is repeated until the pelvis is dry. It is manifest that if special care is taken in cleaning one thumb and forefinger that asepsis can be maintained. And this can be done with little expenditure of time.

A satisfactory method of dressing the wound is to use a wet sublimate gauze dressing until the tube is removed, and then to apply a powder consisting of iodoform one part, and boric acid seven parts. The deep sutures should be removed on the seventh or eighth day; at which time the wound should be supported with adhesive straps. Some days later the superficial stitches may be taken out.

The Bladder.—It is best to encourage the patient to void urine. When necessary the catheter must be used. Every care should be taken to avoid catheter cystitis. This is best accomplished by using a glass catheter, having it carefully washed in running water after use, and kept in sublimate solution until needed again. Before the catheter is used the vestibule should be wiped dry with absorbent cotton. Then the catheter, properly lubricated with vaseline, should be introduced, the parts being exposed.

The Bowels.—The bowels should be moved early—the second or third day. I believe that the pain after abdominal section is largely intestinal—due to flatus, or to irregular peristalsis—and that the best way to relieve it, is to open the bowels. The plan of giving a brisk cathartic shortly before operation so as to secure an early evacuation of the bowels, commends itself to my judgment, though I have not employed it. On the second or third day an enema is given; and should this fail, calomel in twelfth-grain doses, every half hour, or concentrated citrate of magnesia solution. (Four ounces equals one pint of the official.) Epsom and rochelle salts have proved too nauseating for my patients.

As an enema the following is used:

℞

Magnesia sulphat	♁	℥
Ol. terebrinth	½	℥
Glycerini	♁	℥
Aquæ, q. s. ad	4	℥ M.

This mixture is a very reliable purgative enema.

The bowels should be kept open at least on alternate days throughout the convalescence. Special care should be taken to prevent the accumulation of scabious masses.

General care, especially by the nurse.—During the first few days, or period of thirst and pain, the patient should be encouraged to bear up, and be told that pain is quite the rule after abdominal section. Nervous, fretful patients must be impressed with the fact that nothing will be given that is not thought good for them, and that personal teasing appeals will avail nothing. As a rule, a good *morale* can be thus established. The nurse can do much to promote the comfort of the patient. During the period of thirst the face and hands should be bathed frequently with ice water, or cold water and alcohol, and the mouth should be rinsed frequently with ice water or a weak solution of permanganate of potassium, or of peroxide of hydrogen. Glycerine and ice water will at times relieve "dry mouth," but generally the sweet taste of the glycerine is objectionable. The nurse should be given the rectal tube, and should use it whenever pain from flatus is present.

The bed ought to be kept strictly clean, and the sheets be kept smooth. The draw sheets and the bandages should be changed at least twice daily. The patient's back should be rubbed well with alcohol or soap liniment two or three times daily. She should be allowed to flex the legs and thighs, when the legs can be comfortably supported by placing a small pillow under the knees. Cotton-wool pads or an air cushion should be provided to ease the back. Attention to these details adds much to a patient's comfort.

I believe that it is best to keep patients on their backs for two weeks after abdominal section. During the first week comfort is best attained by avoiding all motion. After eight or ten days the use of the bed rest permits sufficient change in position. After three weeks the patient may be permitted to sit up out of bed. Hernias are best avoided by careful suturing, and by rest until firm union has occurred.

COMPLICATED CASES.

Shock.—Shock is best met by the application of external heat, the use of strychnia,

digitalis, caffeine, and whiskey hypodermically, and of decoction of coffee or beef tea by rectal enema. Within eight hours, thirty minims of the tr. of digitalis, one eighth of a grain of sulphate of strychnia, and two or three grains of the citrate of caffeine may be given. If recovery is not prompt, one-half of a grain of the sulphate of strychnia, and one drachm of tr. of digitalis may be given in twenty-four hours, and enema of beef tea, eight ounces to one pint with whisky one or two ounces may be given every two or four hours. This treatment can be continued for some days. If much blood has been lost, large amounts of fluid will be absorbed from the rectum. A saline solution, also, may be injected into the areolar tissue under the skin. After one or two days, if rectal feeding is necessary, a more nutritious mixture should be substituted. I have used the following:

One egg; milk eight ounces, peptonized; and add whiskey one or two ounces. This quantity can be given by enema every six hours. If rectal feeding is kept up for many days, it is well to wash out the rectum daily with soap suds, so as to remove decomposing material and prevent proctitis.

Vomiting.—Vomiting from ether cures itself. When vomiting continues more than two days, some other cause must be sought. If not excessive, vomiting will usually cease if no fluids are given by the mouth. A mustard plaster over the epigastrium, or a tumbler full of hot water will at times arrest it. If simple means fail, it will be found that the vomiting is due to peritonitis, or to impending obstruction of the bowels. In either case the bowels should be moved at all hazards. This is accomplished best by the use of the purgative enema already noted, given, if necessary, through the rectal tube into the colon. Broken doses of calomel can be given when other purgatives are rejected. Concentrated solution of citrate of magnesia, and Seidlitz powders also can be used. The continued use of these agents usually will open the bowels. Secondary abdominal section for the relief of obstruction should not be undertaken too quickly, as not infrequently the bowels are moved only after repeated efforts; and, moreover, the results of the secondary operation are not encouraging.

Fever.—When fever occurs the bowels should be kept freely open, and the body be sponged freely with cool water. The use of antipyretics is of doubtful value. When to re-open the abdomen for peritonitis, and when to trust to medical measures is a very difficult problem. In general, when the skin is dry, the face flushed, and the pulse full and bounding, secondary operation will be unnecessary; but when the skin is "leaky," the extremities cool, and the pulse rapid and feeble, absorption of septic material is going on and operation is indicated. Unfortunately the result usually is death.

Opium.—The use of opium in any form in typical cases of abdominal section is unnecessary. A little encouragement during the first day or two will enable the patient to stand the pain, and later it is quite bearable. Occasionally morphia is useful when a nervous patient becomes much excited, and cannot otherwise be controlled. I feel convinced that the experience of the past few years has demonstrated the fallacy of the doctrine that opium is curative in peritonitis; and that it finds its legitimate field in abdominal surgery in combating extreme nervous excitation, and in easing the last hours of the dying. Occasionally it may be used temporarily to relieve extreme pain.

Asthenia.—Asthenia must be combated by the systematic use of nutritive enemas with whiskey, together with the administration of such liquid food as the stomach will bear. Champagne can often be given with advantage where other stimulants are rejected. Less can be done by alimentation and medication after abdominal section than after other operations to combat asthenia, because, as a rule, the stomach is not available. The fate of the patient is decided, in general, when the operation is completed.

SOME POINTS IN THE SURGICAL TREATMENT FOR THE RADICAL CURE OF HERNIA.

BY AUGUSTUS P. CLARKE, A. M., M. D.,

CAMBRIDGE, MASS.

One of the most important features in the surgical treatment for the radical cure of hernia is the selection of the proper material for sutures. The sutures in all cases should be aseptic. The wound made by the incision should also be kept aseptic. The operator should have knowledge of the manner in which the sutures have been made, and in order to have such knowledge he should superintend their final preparation. Sutures which have been prepared and are sold in shops should in no event be trusted, notwithstanding the careful manner in which they may seem to have been prepared. No one,

except the surgeon, or his immediate assistants who are to use them, and who have taken occasion to make most careful observation, is at all likely to appreciate this necessity, and to carry out in every detail measures necessary for assuring their preparation in such a manner that they can be relied upon as being surgically clean and perfectly free from germs. Experience has demonstrated that the best material for buried sutures is that obtained solely from animal substances. Cat-gut and tendon, when properly prepared, afford the best material as is yet known for such sutures. Considerable experience is required in chromicising them. If the sutures remain long in the acid they become hard and offer too much resistance to the action of the tissues. The same effect occurs when the quantity of acid is in excess of the due proportion. If, on the contrary, the sutures are not sufficiently chromicised they undergo absorption before complete union of the coapted parts of the wound takes place. Silk ligatures, however carefully prepared, should not, as a rule, be employed in operations on hernia; their substance is not akin to those of the tissues into which they are to be inserted; they are liable to be the medium, either directly or remotely of sepsis, and are rarely, if ever, absorbed. In cases in which they have been used, it has been necessary, for the most part to establish some means of drainage. Such expedients serve to prevent the occurrence of immediate adhesion of the tissues, and to render the line of union weak and yielding, and consequently to afford but little protection against a return of the hernia. The same may be said when horsehair and certain other materials are used for such sutures. It is true that for affording immunity against the recurrence of the hernia the internal ring, may be embossed by the inverting of the sac on its peritoneal surface. This measure may, for the time being, be of some service especially in a case in which a well fitted truss is worn. Such unnatural coaptation of parts is liable, however, to yield before the superincumbent pressure of the abdominal viscera and thus to cause a return, at length, of the hernia. Application of quilled sutures fall far short of accomplishing what is most to be desired, for the adoption of this method of procedure, when silk, or like substance is employed has to be supplemented by some special provision for drainage to the wound. One of the features which I here insist upon to be achieved is that the several different tissues be coapted, each in its proper order and that direct and immediate union be secured without the necessity of having to resort to any method of drainage whatever. Another important feature to be secured in the operation is the restoration of the obliquity or the valve-like form of the inguinal canal, and also of the internal and external abdominal rings. Attention has been called to the importance of this measure, but as yet, I believe, it has not been generally appreciated. This may be effected by free dissection proceeding from the internal ring. In cases in which the tissues have undergone serious changes, or the parts have become distended, deformed, thickened or attenuated much difficulty will be encountered in accomplishing such restoration. Every effort, however, should be made to bring back the canal as near as possible to the typical one, as regards length, diameter and obliquity. In those cases in which the canal has become tortuous, or in which the opening is formed at an undue angle to the parietes of the abdomen, and the parts are not reformed but are left in abnormal condition, the operation undertaken for the radical cure will prove to be of temporary benefit only. Statistics are sometimes offered by different operators to show that certain methods of practice are attended with unusual success. Statistics can be of but little value when the individual operators select cases with the view of showing favorable results of their special methods of operating. In a case in which the sac is to be removed the cord should be freed as high as possible even if the peritoneum has to be impinged upon. The sac should be sewed off by means of aseptic animal sutures; and if the other steps in the operation have been properly taken there will be scarcely any danger of a return of the hernia. There are several advantages in the method of removing the sac. Prominent among them is the greater facility for inspecting its contents and for guarding against the possibility of reducing parts which may be in a state of inflammation. Such a condition of the parts is particularly apt to occur in cases of strangulated hernia, after prolonged taxis or other measures for relief have been undertaken. When the hernia has been properly reduced, the sac should be regarded only as an unnecessary incumbrance. The sac is formed originally from the parietal peritoneum, which frequently becomes distended and thickened. The various changes in its nutrition and vascularity often lead to irritation, inflammation and adhesion, according to circumstances and accidental

conditions. In all cases after opening the sac the surgeon should see whether the circulation returns. If the parts have been too long compressed and there is much danger of sloughing, it will be advisable to resort to resection of the necrosed portions, and not to assume risks of returning them. After opening the sac and relieving the constriction, and before making reduction, the contents of the sac should be carefully examined. If there is evidence of inflammation or an effusion of lymph, free irrigation, with mercuric bichloride should be had recourse to. The sac should then be sowed across at its neck with animal suture and be excised. Different methods of operating for the radical cure of hernia from time to time have been reported. Emphasis is often laid upon the adoption of the most careful antiseptic precautions. A more particular examination of such reports almost invariably reveals the fact that some method of drainage has been employed. The failure on the part of the operator to keep the wound aseptic, must necessarily render the line of union weak, the parts in large measure devoid of vitality, and thus incapable of overcoming the pressure which is the cause of the recurrence of the hernia. This is the reason, no doubt, why so many different methods for the radical cure of hernia have been devised, and why each method of operating, for the most part, undertaken by a different surgeon, so often proves unsatisfactory. In some cases of femoral hernia, excision of the sac is almost imperatively demanded. In those cases in which Macewen's method is adopted, the thickened mass is liable to set up more or less irritation, and to become the source of much inconvenience.

When the sac is removed the ring and canal can be narrowed and sutures can be introduced, in close proximity to the vessels without causing injury or disturbance to the circulation. Another advantage, according to Mr. Poland,[1] is that it allows the closure of the neck of the sac, and thus effectually prevents all hæmorrhage from the wound into the peritoneal cavity. After the sac has been removed the loose folds in the vicinity can be more nearly approximated, the exudation of plastic lymph readily closes the wound effectually from any communication with the abdominal cavity. After the edges of the pillars have been refreshed they may be brought together and retained by aseptic sutures. By this means the canal is reformed but narrowed, and becomes an effectual barrier against the recurrence of hernia. This method is evidently of far more importance than the one which seeks to utilize the sac by invaginating it in the canal, and by converting it into a pad, or fixing it as a boss over the internal ring. Of course in cases of chronic hernia, in which there has been much inflammation, considerable difficulty will be experienced in separating the sac from the surrounding parts. If, however, much care be exercised, and a liberal use of the aseptic sutures be resorted to, the sac can be separated and be removed, to a certain extent without incurring the risks of gangrene, suppuration or inflammation, and the operation will therefore not appear so difficult or dangerous as some writers would lead us to believe. In a recent case in which the hernia is quite small, the sac and hernia may have passed into the abdomen and so have disappeared. These cases may be operated upon without our interfering with the sac. The edges of the pillars should in such cases be refreshed, and approximated by aseptic animal sutures. The other parts are sewed together according to the method already referred to. In congenital cases the cord and sac are frequently found so blended with each other that to separate the one from the other is often most difficult and tedious. In such cases, when there is no appearance of recent lymph, portions of the sac may be left. The remaining fibres for the most part, usually undergo absorption or degeneration. This measure in the operation is quite different from the one which, as said before seeks to plug the canal and internal ring, by means of the retained or inverted sac that is liable to form a painful or hardened mass in connection with the ring and canal. In operations for the cure of hernia, the use of wire sutures is unnecessary, and should not be encouraged. The use of wire sooner or later, becomes the source of inconvenience, if not of serious trouble, and notwithstanding the efforts made in other respects to keep the wound aseptic, their presence is followed by irritation or ulceration, conditions that will necessitate their early removal and thus compromise the usefulness and advantages that should be derived from the surgical measures undertaken. Other methods of treating the sac have been proposed. The cases in which the method by torsion of the sac, can, with any degree of safety, be resorted to are too few for general

[1] John Poland, F. R. C. S. Braithwaite's Ret. Part 98, page 124.

considerations. In every such case the operator of course must be law unto himself

In conclusion I would say that every operation, for the radical cure of hernia, in which the wound is kept strictly aseptic including the employment of thoroughly aseptic animal sutures the results will be most satisfactory, and but little danger is to be apprehended of a return of the hernia. These favorable results may be expected to follow in the cases in which the sac has, as far as possible, been excised, without injury to the cord or other parts. In all cases expected to be successful the operation should be so conducted that no drainage, however simple in its details, should in any way be required. The necessity of observing this principle in operations for the cure of hernia, has been urged by my friend, Dr. H. Q. Marcy. He[1] says the "Coapted surfaces held aseptically at rest, readily tolerate the limited effusion which is utilized in the process of repair. The elimination of the drainage tube, renders the complete closure of an aseptic wound possible, and prevents its further extraneous contamination. Repair ensues as in a subcutaneous wound. The advantages of this method in the treatment of the wound, is the assurance of non-infection. By every method of antiseptic dressing with drainage all surgeons have admitted the great difficulty, and, in children the well nigh impossibility of retaining the wound aseptic." The results of the operations in the hernia cases, occurring in Dr. Marcy's practice, with which I have been connected, and also in those in my own for the past twenty years fully justify the conclusion here reached. By the observance of these principles of aseptics inoperative treatment for the radical cure of hernia, Dr. Marcy has, according to my judgment, attained a success that has scarcely been paralleled.

SOCIETY REPORTS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, May 29, 1891.

The President, John B. Roberts, M. D., in the Chair.

DR. FRANK WOODBURY SUBMITTED A PAPER ON NITROGEN-CONTAINING FOODS AND THEIR RELATIONS TO MORBID STATES.

In connection with the paper of the evening, by Professor Chittenden, upon the "Food-value of Beef-preparations," I have been invited by the Honorable Board of Directors to contribute a few remarks upon "Nitrogen-containing Foods and their Relations to Certain Morbid States." Under the circumstances, it is proper that what I have to say shall be made as brief as possible.

At the outset, our attention is drawn to some fundamental physiological facts which must be kept in mind during the discussion of this subject. The human body is now regarded as a unit composed of an aggregation or community of cells. These anatomical elements differ from each other in some respects, but agree in this: each cell consists of two parts, one living and one non-living, corresponding with cell-nucleus and formed material. What is visible to us is the non-living part, or the formed material; the real living part of the organism is hidden from view. Just as in vegetable tissue, the parts that are permanent and solid are composed of the cell-walls, which may remain long after the essential living part or protoplasm of the wood-cell has dried up and disappeared—in a similar way, in the human subject, the various organs and tissues which give it form and substance are not living; the only part exhibiting vital phenomena is the soft, shapeless, and colorless cell-nucleus, consisting of protoplasm or bioplasm. This living substance, in its chemical composition, resembles the various tissues, varying somewhat according to function, but it contains one essential ingredient which is so characteristic as to confer its name upon the whole class—this element is nitrogen. The celebrated dictum, "Without phosphorus, no thought," might be paraphrased "Without nitrogen, no life." Viewed from the physiological stand-point, the name "Azote," applied to this element by Lavoisier, appears remarkably inappropriate.

As a necessary constituent of the tissues, therefore, nitrogen, in a state of combination, is always present in the human body. Since it is found in considerable quantity and in various forms in the excretions, some two or three hundred grains being discharged daily by the kidneys alone besides what is lost by the intestinal tract and the skin, it is evident that in order to maintain life the supply must be kept up from outside sources. There are two principal directions in which we may look for the supply of nitrogen, (1) the atmospheric air, and (2) the food.

Although the atmospheric air contains about eighty per cent. of nitrogen, we may dismiss this at once as not available, beyond

[1] Treatise on the Radical Cure of Hernia, page 87.

a very limited extent. Experiment has shown that it is not consumed or absorbed in the act of respiration; but a certain amount of air is always swallowed with the food and passes into the stomach, where it may become absorbed by the gastro-intestinal mucous membrane. It is possible that a small quantity is introduced by this channel, especially since it has been demonstrated that a moderate amount of gaseous nitrogen is excreted or exhaled by the skin.

Nitrogen-containing food must, therefore, be regarded as practically the only source of the constant supply of nitrogen which is so essential to the maintenance of the body in a normal condition. In fact, due attention has already been given to this by Liebig, Fick, Wislicenus, Parkes, Pavy, Flint, and others; and the proper relation of the two great divisions of proximate principles of organic origin, the nitrogenized and the non-nitrogenized, have been pretty closely determined. As their results are to be found in all the text-books, I will not refer to them in detail. I may remark, however, in passing, that from the clinical standpoint there appears to be a fallacy underlying all these calculations of dietaries, where food values are expressed in grains of nitrogen and carbon, inasmuch as no allowance is made for waste; the entire quantity ingested is supposed to be digested and assimilated. In practice we know that the feces contain considerable nitrogen, which is not excretory, properly speaking, but represents the excess of consumption, part of the food having escaped digestion. In nursing infants the feces consist largely of undigested casein. Even adults are not able to entirely digest milk, and if so simple an article of food as milk is not completely assimilated, what warrant have we for assuming that the nitrogenized constituents of peas and beans, or of animal tissue, will yield their full equivalent of potential force to the organism? On the contrary, we know it to be a fact, that much food-stuff passes through the alimentary canal without having its proximate principles extracted by the digestive organs and the absorbents.

We may, however, both clinically and by physiological experiment, making due allowance for the personal equation, determine with sufficient exactness the kinds and proportion of different foods required to maintain the body in a normal condition. Proceeding on the same lines, we may discover the effects of an excess, actual or relative, of nitrogen; or, on the other hand, we may ascertain the results of deprivation either partial or complete. We may also be able to see some therapeutic applications of the knowledge thus gained.

From the time of Hippocrates, and even earlier, it has been known that health and disease are largely influenced by food, and that the effects of an animal diet are different from those of a diet exclusively of vegetables. A distinction was even made between leguminous and other forms of vegetable food. It was not until our own day, however, that the practising physician possessed sufficient knowledge of the chemistry of food and of metabolism in health and disease to enable him to direct the diet of his patients upon scientific principles. Following the definition given by Hippocrates, "Medicine consists in addition and subtraction, the addition of the things which are deficient and the subtraction of those things which are redundant; he who practises this is the best physician, but he whose practice is farthest from it is the farthest removed from a knowledge of the art"—we can now prescribe viands suited to a deficiency of nitrogen in the system, or substitute others if there is an excess. To the therapeutic aspect of the subject I will now very briefly ask your attention.

Taking up the latter instance first, we find that a diet poor in nitrogen is useful in the several forms of rheumatism, in gout and lithæmia, and also in recurring attacks of biliousness and bilious headache. Scurvy appears to be caused by an absolute, as well as a relative, excess of nitrogen in the food, and I have seen it caused by the use of an excessive amount of fresh meat among children in an orphan asylum. In its treatment, vegetable food relatively poor in nitrogen is usually employed. Some skin diseases, possibly of lithæmic character, are only to be cured by withholding nitrogenized food. It seems possible that a liberal use of meat in the diet may have some connection with the development of cancer, a disease which appears to be on the increase, as was pointed out by Dr. R. A. Cleemann, of this Society, in his "Address on Hygiene," delivered before the Medical Society of the State of Pennsylvania a few years ago. Dr. W. Mattieu Williams, in a little work on the "Chemistry of Cookery," pointedly directs attention to the large consumption of meat as a cause of various forms of cancer. In families where a hereditary tendency of this kind exists, it is possible that it might be overcome by vegetarianism. Some

nervous affections, notably epilepsy and chorea, are greatly benefited by abstention from meat in the food.

Owing to the writings of Roberts, Fothergill, and others, a causative between a diet rich in nitrogen and some forms of kidney inflammation or degeneration is now generally recognized. And in the treatment of the various forms of Bright's disease, attention to the diet is generally admitted to be of prime importance. There is a widely spread opinion that nitrogenized food is favorable to the occurrence of inflammation, and for this there seems to be a scientific foundation. Parkes has shown that a non-nitrogenized diet causes lowered blood-pressure and diminished arterial tension. Meat, therefore, is ordinarily prohibited under the antiphlogistic treatment, as it was formerly called. In acute inflammations of mucous surfaces, especially in plethoric subjects, the use of animal food is usually forbidden. This should not be applied too strictly, however, for in some cases of subacute or chronic character, a generous and nourishing diet is necessary.

On the other hand, nitrogenized food may be prescribed where there is, from any cause, a deficiency of albuminous principles in the blood, for example in anæmia or chlorosis. In phthisis, this condition is sometimes quite marked and good results have been obtained from the "beef and hot-water" plan of treatment, and also from the use of fresh bullock's blood, or hæmoglobin, which requires less digestive capacity and is more easily assimilated than muscle-tissue.

Children frequently suffer from a deficiency of nitrogen. Where an infant is reared upon condensed milk entirely, the limbs are plump but the tissues are flabby, on account of anæmia. Such children are late in getting their teeth and have little power of resistance against disease. The addition of oat-meal, barley, or rice to the milk will often bring about marked improvement and may prevent the development of rickets. Just here I might stop to point out the fallacious character of some of the arguments based upon the comparative chemical composition of woman's milk and other foods. Leeds found in a number of specimens of woman's milk that the nitrogenous constituents varied from 4.86 to 0.85 per cent. So that one specimen of mother's milk may have six times the amount of albumious material contained in another.[1] This shows the necessity when the child does not thrive at the breast, of examining the milk to find out if it be deficient in nitrogenized constituents. If so, the addition of beef-meal, bovinine or other nitrogen-containing food in an easily assimilable form is advisable.

Eczema in infants, or in sewing woman, is often traceable to a deficiency of nitrogen in the food, and Dr. Rohé, of Baltimore, advises the addition of meat-broth and eggs to the diet as an essential part of the treatment. Similarly, in many syphilitic eruptions upon the skin, in broken-down subjects, good food is a necessary preliminary to any specific treatment. Neurasthenia and atonic dyspepsia, which are so often associated in the same patient, especially if he is at the same time anæmic, can only be relieved by nitrogenized and fatty food, administered in a form easy of assimilation and at comparatively short intervals. On the other hand, in diabetes and in obesity, the diet may be largely nitrogenous, but in this case it is because there is a desire to reduce the carbo-hydrates and not because an excess of nitrogen is particularly sought after.

To return to the children, I wish to call attention to the fact that during the period of growth and development more nitrogen is needed than after the body has assumed its full stature. Hence, school-children should have a due allowance of meat, and should be encouraged to eat oat-meal, corn, beans, peas, and other vegetables known to contain this valuable constituent.

In the foregoing brief *résumé* of an important and interesting subject, I have not made any distinction between the nitrogenous, proximate principles of animal and vegetable origin. Chemically and physiologically they are nearly identical; but practically there are minor differences of palatability, digestibility, and relative utility, which, at present, our limits will not permit us to consider.

[1] Quoted by Starr in his "Hygiene of the Nursery," Philadelphia, 1888.

—Sanitary administration means not only personal comfort and health in the family, but economy to the state and family. Two hundred and fifth thousand lives lost, three million cases of sickness and $20,000,000 in money are traced, in one decade in England alone, to neglect of sanitary care. The sword and musket are terrible ministers of death, but even in armies, where battles kill one person, disease kills at least three.—*Ex.*

SPECIAL CORRESPONDENCE.

LONDON LETTER.

LATE SPRING AND THE INFLUENZA—REJECTION OF THE NEW SCHEME OF THE LONDON UNIVERSITY—SIR WALTER FOSTER ON PROFESSIONAL POLITICAL POWERLESSNESS—PROFESSOR GAIRDNER'S LITTLE ANECDOTE.

Spring is late in coming this year. Hail storms have been reported all over the country, varied with snow and sleet, while every now and then a warm, genial day is dovetailed into the midst of this backward season. The cold has swelled the Registrar General's returns in no small degree. In London alone there is an increase of 433 deaths above the average number for the last ten years. The deaths from diseases of the respiratory organs were 584, or 240 in excess of the average; of these 230 were attributed to pneumonia, and 302 to bronchitis. Influenza rose to 148, or 21 in excess of the highest weekly number of deaths in the 1890 outbreak. The death rate for the Metropolis amounted to 24.0 per 1,000. In some of the provincial towns, however, the rate has been brought up to fever pitch. Sheffield, for instance, has shown the following figures for the last three weeks during the influenza epidemic: 57.8, 70.5, 59.3; Leeds, 27.9, 36.1, 48.3; Manchester, 29.8, 35.1, 43.6. A more intimate acquaintance with this mysterious disease is impressing on us the important lesson that fatalities are largely influenced by surrounding insanitary conditions. The smoky atmosphere of Sheffield, together with the dusty workshops, render its inhabitants especially liable to chest affections. The other day a member of the House of Commons solemnly warned the Commissioner of Works that by leaving the windows of the House open he was admitting the influenza. If closed windows would exclude the microbes our difficulty in dealing with those obtrusive vegetable organisms would be materially lessened, but, alas, they are not so easily given the cold shoulder.

The revolutionary spirit of the age seems to have at last invaded the domain of medical education. Two of the most conservative and autocratic of the London powers have lately received a sharp reminder that governing boards cannot for ever ignore the wishes of their constituents. The new scheme of the Senate for providing a degree on "reasonable terms" has been rejected by an overwhelming majority at the meeting of the Convocation of the University of London. The chief opposition has been raised by the provincial schools, which were barely allowed a voice in the proposed future Senate. Then the Council of the College of Surgeons sanctioned the scheme without consulting its members and fellows. At a general meeting of the College a formal censure was passed on the Council for having taken that step, and a further resolution declared it undesirable that that body should have increased power over medical education. Mr. Lawson Tait carried another motion that no amalgamation scheme would be perfect that did not include the Society of Apothecaries, which the Senate had entirely ignored. And thus there is every prospect of a lively struggle. However, there can be no doubt that the student will get his London degree in a not very distant future without being forced to seek it in the Provinces. Some of the journals do not mince matters, but say in so many words that it is the instinct of self-preservation only that has forced the hands of the London Senate. The Scotch newspapers openly acknowledge that the establishment of a teaching London University will be a great blow to their own Universities.

Notwithstanding the attempt of the London Senate and of the London teachers to ignore the Provinces, there is no question that many of our most able men are in the Provinces, although in the natural course of events a goodly number of them are drafted on the Metropolis. One of the first men to call attention to the existence of such a thing as a democracy in the medical profession was a Privincial physician, Sir Walter Foster. In 1883 he made a famous presidential speech before the Birmingham branch of the British Medical Association. In that address he pointed out the political powerlessness of the profession, and started the wave of thought that is now sweeping against various ancient barriers. Sir Walter has lately resigned his appointment as honorary physician to the Birmingham General Hospital, which he has held for upwards of twenty years. Five years since he was elected direct representative on the General Medical Council, and is a member of the House of Commons. On the occasion of his first entering on public life, he says that Sir Andrew Clark wrote him a word of warning to the effect that "Medicine is a jealous mistress," to which reminder he replied that the best antidote was unbroken loyalty. Sir Walter struck a key-note in the further remark that in all his

public work he never had, and hoped he never should lose sight of medicine, for he believed their profession was interwoven with the highest and best legislation and with the future welfare of mankind. This is very much the conclusion that is arrived at by most philosophical thinkers, and may be otherwise expressed in the formula that medicine is one of the most progressive, as it is the most comprehensive, of all professions. After waiting all these centuries, the outside world seems to be waking up to pretty much the same conclusion. Peerages, however, are as yet reserved for such men as soldiers, bankers, brewers, diplomats and successful politicians. Sir James Paget has often been mentioned as our coming peer, but Ministers have not yet made up their minds.

Professor Gairdner has revived an old story that went the round in Edinburgh many years ago, of which it can be said, *Se non e vero 'e ben trevate.* He asks whether it is better to test a harmless remedy by giving it all round, or to adopt the more scientific plan of giving it to one-half of our patients (reserving the other half as a control experiment). The story refers to the former method. "A lady, finding in her prescription something unwonted and as she thought uncanny, turned back to get a further explanation from the Professor, who was by that time fully occupied with someone else. But the man at the door was equal to the occasion. Taking the prescription into his hand he ran it over with a practised eye, inured even to Latin formulæ by long and faithful service in a medical man's house. He returned the paper to the lady and showed her to the door again with the remark," Ou aye, mem, it's a'richt; they're a'gettin' that 'the now." The Professor had been experimenting all round, more or less, with some of the more unwonted metallic salts, such as titaninm, cadmium, tellurium, palladium and so on, most of which turned out to be tonics, with the exception of one, which had the awkward peculiarity of causing the patient to shed abroad such a peculiar and disagreeable perfume or stink (if you will pardon the word) that it had to be forthwith abandoned on that account." As Dr. Gairdner remarks, the anecdote did not detract from the world-wide fame of the Professor in question, nor was it known to have emptied to any extent his over-flowing waiting-room.

D. W.

Selected Formulæ.

BLENNORHAGIA.

℞

Creasote	gtt. x.
Fl. ext. of hamamelis	
Fl. Ext. of hydrastis canadensis	aa...gtt xv.
Rose Water	60.0 grammes.
Water	200.0 "

M.

—*Journal de Méd. de Paris*, May 10, 1891.

TREATMENT OF FISSURED HANDS.

After having washed the hands in tepid water, apply a small quantity of the following solution to the fissures, and let it dry:

℞

Tannin	1.0 gramme.
Glycerin	20.0 grammes.
Water	100.0 "

M.

At night, on retiring, the following salve should be applied:

℞

Ext. of ratanhia	2.0 grammes.
Lanolin	50 0 grammes.
Vanillin	0.10 gramme.
Rose oil	gtt ij.

M. et. fiat. unguentum.

Gloves should be worn at night.

—*Journal de Méd. de Paris*, May 10, 1891.

WHOOPING COUGH.

Von Genser is said to use the following prescription in the treatment of whooping cough:

℞

Carbolic acid	1½ grains.
Rectified spirit	2 drops.
Tincture of iodine	5 drops.
Tincture of belladonna	10 drops.
Peppermint water	2 ounces.
Simple syrup	1 dram.

To a child of two years a teaspoonful of this mixture may be given every two hours.

INSOMNIA.

Dr. E. C. Hooved, of Dayton, Ohio, gives an efficient preparation for use in the insomnia following alcoholic excesses, etc., which is permanent, contains no alcohol, is perfectly miscible with water and can be readily prepared by any pharmacist. His formula is as follows:

℞

Chloral hydrat	
Potass. bromid	aa 3iv.
Ex. cannabis ind	
Ex. hyoscyami	aa grs. xvj.
Chloroformi	3ij.
Aquæ (bullientis)	ad Oij.

Dissolve the cannabis in the chloroform and add the chloral. Pour the boiling water on this and then add the bromide and the hyoscyamus. When cold filter. A clear amber-colored solution results, con-

taining a dram to the ounce of the chloral and of the bromide, which is in every way as efficient as proprietary preparations like bromidia, chloro-anodyne, etc., and which has the advantage of our knowing just what is in it and how much.—*Lancet and Clinic.*

THE TREATMENT OF HICCOUGH.

The *Gazette Hebdomadaire* gives the following treatment for hiccough. The local treatment is to compress the phrenic nerve and the pneumogastric in the neck by pressure with the index finger, which will often cause immediate cessation of the spasms. The medicinal treatment consists in the administration of a coffee-spoonful of vinegar mixed with a little powdered sugar, or the following formula may be used:

℞

Subnitrate of bismuth	45 grains.
Oxide of zinc, Valerianate of zinc, Powdered calumba	of each...1 drachm.
Powdered Opium	½ grain.
Essence of anise, a sufficient quantity.	

Mix thoroughly, and give half a teaspoonful of this powder in a wineglassful of sweetened water.

TREATMENT OF PARASITIC DYSENTERY AND OXYURUS.

C. Minerbi employs naphthalin (*Médecine Moderne*) suppositories and oily enemata, the suppositories being made as follows:

℞

Naphthalin, Butyr. cacao	aa 3ijss.

M.

When the ulcers are seated higher up than can be reached by suppositories, the author has recourse to oily enemata:

℞

Naphthalin	gr. lxxv.
Ol. olivarum	3v.

M.

At the beginning of the dysentery the injections cannot be held much longer than a half-hour, on account of the tenesmus. They should be repeated three or four times every twenty-four hours at this period. Later, the patients succeed in retaining them longer and longer so as to last five or six hours, or even be absorbed. Besides this the enemata do not bring about constipation.

For oxyurus the same method has been successfully employed, children infested with this parasite being cured in less than a week. The formula employed is as follows:

℞

Naphthalin	gr. xv-gr. vxij.
Ol. olivarum	3x-3xv.

M.
Sig. For one injection.

For an adult the enema should be made stronger such as:

℞

Naphthalin	gr. lxxv-3jss.
Ol. olivarum	3xv-3xx.

M.
Sig. For one injection.

COCAINE IN ASTHMA.

C. R. D. Sylva reports a case in which very severe attacks of asthma were in a few minutes entirely relieved by the following subcutaneous injection:

℞

Cocaine hydrochlor, Morph. sulph.	aa ¼ gr.
Aquæ destil.	q. s. M.

—*Ind. Med. Gaz.*

ALOPECIA FOLLOWING CONTINUED FEVERS.

℞

Ext. jaborandi f	
Tr. cantharidis	aa 3 ss.
Glycerine	
Olei vaselin	aa 3 i.

M. Sig.—Apply locally with a sponge at night.

—*Barthlow in Col. and Clin. Rec.*

PRESCRIPTION FOR ECZEMA OF THE ANUS AND GENITAL ORGANS.

Lustgarten advises, in *La Semaine Médicale*, the following ointment:

℞

Oleate of cocaine	15 to 30 grains.
Lanolin	1 ounce and 2 drachms.
Olive oil	2½ drachms.

Use externally.

Make an application of this ointment twice daily, and after each application powder the affected part with any absorbent powder whatever. Warm soap baths will aid in curing the disease. In pruritus ani, suppositories of cocaine can be employed with advantage.

TREATMENT OF ERYTHEMA OF THE EYELID.

Brocq, in the *Revue d' Ophthalmologie*, states that he employs the following ointment in the treatment of erythema and swelling of the eyelids:

℞

Salicylic acid	7 grains.
Lactic acid	7 "
Resorcin	10 "
Oxide of zinc	30 "
Pure vaseline	5 drams.

Care should be taken that none of the ointment enters the eye.

In other cases the following ointment may be applied:

℞

Salicylic acid	15 grains.
Pyrogallic acid	30 grains.
Vaseline	15 drams.

This treatment is to be applied at night, and it may be alternated with that containing resorcin just given.—*L' Union Médicale.*

THE

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EDWARD T. REICHERT, M. D.,

PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF PENNA.,

EDITOR AND MANAGER.

N. E. Cor. 13th and Walnut Streets,

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Write on one side of paper only.

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Make as few paragraphs as possible. Punctuate carefully. Do not abbreviate or omit words like "the" and "a," or "an."

Make communications as short as possible.

NEVER ROLL A MANUSCRIPT! Try to get an envelope or wrapper which will fit it.

When it is desired to call our attention to something in a newspaper, mark the passage boldly with a colored pencil, and write on the wrapper "Marked copy." Unless this is done, newspapers are not looked at.

The Editor will be pleased to get medical news, but it is important that brevity and actual interest shall characterize communications intended for publication.

LEADING ARTICLE.

TRACHEOTOMY VERSUS INTUBATION.

Tracheotomy and intubation are the two recognized surgical procedures for the relief of tracheal and laryngeal obstruction. One or the other of these operations may be required to relieve the dyspnœa dependent upon membranous laryngitis or diphtheritic laryngitis, growths in the larynx or trachea, growths exterior to these organs causing pressure upon them, œdema of the mucous membrane of the larynx or trachea from inflammation, from the inhalation of irritating gases, from the swallowing of corrosive liquids or from burns or scalds, etc.

For many years, tracheotomy had been the only method employed for surgical interference in these cases. In 1880, Dr. Joseph O'Dwyer, of New York, began a series of experiments which, later on, resulted in the perfection of the operation, now known as intubation. It is certainly an ingenious plan and the contrivances for its performance reflect more than ordinary credit on the inventor and investigator.

Regarding the utility of intubation in general practice, it is the object of this paper to discuss, as well as to show the relative value of the operation as compared with that of tracheotomy.

The advocates of intubation, claim that on account of the simplicity of the operation and the avoidance of the use of the knife, it is the procedure that commends itself most highly to the profession and is the operation that will be allowed most readily by the laity.

True, the operation of intubation is a knifeless procedure, and so far as the general public are concerned, is the one they would select, if the choice were theirs. But, on the other hand, is intubation a simple surgical operation? If it is, then it certainly, in this respect, possesses a decided advantage over tracheotomy. Unfortunately such is not the case, for not only is the operation, as well as the removal and replacement of the tube very difficult procedures, but the

requisite manipulations require a degree of manual dexterity which the average physician is not apt to acquire, who is called upon to practice the operation only on rare occasions.

Furthermore, the re-introduction of the tube, which is a frequent necessity in cases of intubation, is a source of constant annoyance to the patient, occasioning all the fright of the primary operation, together with nervous and physical exhaustion of the child, induced by its alarmed condition and attending struggles. The exhaustion hereby produced, is, in diptheria, above all things, to be avoided.

Among other complications, accompanying or following the operation, may be named: 1. Loosened false membrane may become wedged in the lower end of the tube, and require its instant removal; or worse still, the membrane may be forced downward by the entering tube into the trachea, and, before it can be coughed up or the passage cleared for the patient to breath, cyanosis may develop, respirations cease and death ensues; no time being afforded for the performance of tracheotomy. 2. Owing to the presence of tenacious or ropy mucus, or from the formation of loose membrane—which the child, in its weakened condition, is not able to expectorate—the tube may require removal at any time, and in the absence of the physician and the inability of other persons to remove it, symptoms of an alarming nature may occur. 3. The liability of liquids finding their way into the air passages, and pneumonia following as a result. This is a source of great danger, which is to be kept in sight, especially as an inordinate desire for fluids exists in these cases, the result, not of actual thirst but of uncomfortable sensations caused by the presence of the tube. 4. In a certain few cases (estimated to be about one per cent.), ulceration from pressure of the tube and alterations in speech have been met with; the aphonia being partial or complete, but always amenable to treatment. 5. The danger of the tube becoming loosened during a paroxism of coughing is by no means slight. In such a case, it may become lodged in the œsophagus, or else be gotten out through the mouth, if prompt assistance be rendered. In either instance, the child is in a serious condition, especially in the absence of a medical attendant. The larynx, after such an accident, is liable to behave in one of two ways: either the swollen tissues will occlude the entrance of air, or the relaxed vocal cords will fall together and give rise to immediate severe dyspnœa.

From the above observations we are forced to admit that intubation of the larynx is by no means a simple surgical procedure, nor is it an operation devoid of dangers. These facts being accepted, our next step is to show the relative value of intubation and tracheotomy, and to prove wherein one is superior to the other.

In the operation of tracheotomy, the physician is able to see his work and to meet such complications as may arise in a cool and calm manner—for he is not working in the dark. Such is not the case when intubation is performed. There the surgeon is obliged to work unaided by sight, trusting entirely to his sense of touch.

In tracheotomy the pain is momentary and the subsequent treatment of the tube can safely be entrusted to the nurse or the child's attendant. Not only so, but the operation once performed, is finished, and the patient is not harassed by subsequent surgery. Unfortunately, intubation is not attended with these results. The presence of the tube may at any moment become a source of danger, and in the absence of the physician, even a cause of death. The operation itself is often as trying to the patient as that of tracheotomy, and the subsequent removal and reintroduction of the tube—which is of daily necessity, at least—repeats all of the suffering, be it mental or physical, of the primary procedure. Furthermore, the operation of intubation has frequently to be followed by that of tracheotomy.

Finally, in spite of the fact that tracheotomy is regarded as one of the most difficult of surgical procedures, it is our belief that any country practitioner, who possesses some

acquaintance with anatomy, and has a cool head together with some surgical experience, can perform it.

Glancing for a moment at the statistics showing the relative mortality and recoveries of the operations, we are confronted with the fact that they are largely in favor of intubation. But when we consider that intubation is frequently followed by tracheotomy, and that the latter operation is often performed when the patient is in a moribund condition, the apparent discrepancy in the results of the operations is explained.

In conclusion, we think we can draw the following deductions:

1. That in cases of equal gravity, tracheotomy is not, in itself, a cause of greater fatality than intubation.

2. That the operation of tracheotomy involves less suffering to the patient, because once performed, it is done, and the patient is not annoyed by subsequent steps, as in intubation, which operation in its repetition, involves all of the harassment of the primary procedure.

3. After a tracheotomy, the patient usually falls into a quiet slumber; such is not the case when intubation has been done. Clearly showing that the presence of the tube, inserted between the vocal cords and into the larynx, is a cause of greater and more prolonged irritation than is the case in tracheotomy, where the tube is placed lower down into the trachea.

4. Intubation involves a great risk of foreign bodies, liquids, etc., entering the trachea and setting up a pneumonia.

5. In tracheotomy, the subsequent cleansing of the inner tube, can safely be intrusted to the nurse. In intubation, the doctor alone can give the tube its needed attention.

6. The physician who is able to perform properly an operation of intubation, is just as competent to do a tracheotomy, and in the latter case, with less liability of dangerous sequelæ following.

Hydrogen peroxide made into a paste with chalk or cuttle-fish bone is an efficient agent for whitening discolored teeth.

CORRESPONDENCE.

BERMUDA.

EDITOR OF THE MEDICAL AND SURGICAL REPORTER.—

Dear Sir:—Seven hundred miles from New York lies a land quite unfamiliar to most Americans, yet having within its borders much to charm, and above all, possessing in large degree that which nature has provided to restore those giving way before our over-active life.

Bermudians assert their climate the most equable in the world, and temperature tables, high and low, largely support this claim, the record for 1889–1890, as compared with several other winter resorts, being:

	Nov.	*Dec.*	*Jan.*	*Feb.*	*Mar.*	*Apr.*
Bermuda	77--62	73--58	71--50	72--49	72--50	74--56
Los Angeles	82--43	68--40	67--34	81--35	81--40	94--42
San Diego	83--46	69--40	66--35	77--38	74--41	85--45
Jacksonville	86--30	80--35	80--40	83--44	85--27	88--47
St. Augustine	84--35	76--43	79--43	81--45	87--28	86--51

The present season has been: Nov., 79–56; Dec., 73–51; Jan., 71–48; Feb., 74–52; Mar., 72–49. As a rule, November, April and May are most agreeable. During December, January and February last, however, the weather most of the time was charming. March is the worst month, when east winds, low barometer and thermometer and frequent showers are apt to prevail. The porous soil admits of outings soon after a heavy rain. As in England, mornings often betoken a stormy day, but the clouds roll by to a beautiful afternoon. July and August for the "outside barbarian" are not to his liking; and September, with its sultry breezeless days, is most oppressive of all. May and June, as regards climatic conditions and the floral beauty of forest and field, offer special attractions; but fashion at present decrees that during March the full tide of travel shall crowd steamers, hotels and boarding-houses to discomfort. The highest pleasure in these sunny isles will never be found till this senseless fad has had its day.

These islands, once called the Isle of Devils, were discovered in 1515 by Juan Bermudez, and, though many in number, only the five largest are tenanted. Their shape is that of a shepherd's crook; their area about twenty-one miles. They form a ring of coral reefs round a lagoon, the coral structure resting on a sub-marine mountain of volcanic origin—a lonely cone rising three miles from the ocean bed. Until the placing, last summer, of the cable to Halifax, they formed the most isolated spot on the globe, save, possibly, St. Helena. The population

is 16,000, of which three-fifths are black. Hamilton, the capital and leading town, contains 2,000.

The soil is red and rich—composed of peroxide of iron, alumina, silica and earthly phosphates—and, fertilized, is largely productive. The climate being semi-tropical, vegetables and southerly fruit abound. The former comprise all known in our northern gardens, the onion, of course, leading the list. This typifies the acme point of Bermudian excellence, according to Mark Twain, who declares that the fond Bermudian father, sending his noble scion of a noble sire out to battle the world, breathes a parental blessing, and—as tending towards the highest attainable—this parting injunction: "My son, be an onion!"

The houses in Bermuda are, almost without exception, built of coral, white, and so soft that it can be cut and trimmed by saw and chisel, but promptly hardens on exposure. The roofs are thin slates of the same material. These are annually whitewashed, and, rising mid their emerald surroundings—the islands are perennially green—give a charm to the landscape that must be seen to be appreciated. Each dwelling is required by law to be provided with a tank for rain water taken from the roof, which, with the yearly whitening, insures its purity. There are wells, but the water is too blackish to drink. Last year the supply was largely increased by several artesion wells, the water of which is good.

Of fruits, bananas, oranges, lemons and the paw-paw are most abundant. The bananas are of the yellow sort—sweet—but too small to compete in northern markets with those from more southern climes. The oranges and lemons are too inferior for use. The paw-paw is essentially a local delicacy, mostly used by the natives. There are no apples or peaches. There is a cherry, but it is not toothsome. On a former visit, in January, strawberries were abundant and good. Since then their culture has largely fallen off; but it has been thought that, with selected plants, extra care and added market facilities—quicker transit and cooling rooms on the steamers—they might be made an export of no little value. So, too, might the valleys and sheltered places produce figs, pineapples and other fruit; but the Bermudian planter seems to let his ambition tend mainly to potatoes and onions.

The cedar is *the* tree of Bermuda; but the palm-tree, the palmetto and bamboo rearing their stately heads, vary forest and field. Flowers bloom the year round, roses—some of which are found only here—the most. The oleander and geranium, fullest in May and June, hedge the highways. Lilies, at best in April, fill whole fields, making a picture beautiful and unique. The varied floral adornings, and so abundant, form one of Bermuda's greatest charms.

The health of these islands is almost always good. A healthy October presages a healthful winter. There has been no epidemic since 1853, when yellow fever made havoc—sparing neither sex, state nor condition. A sort of pessimistic writer hinted last summer that enteric fever was rather rife, but it was not true. The greatest mortality is under five, and, among the blacks, largely due to neglect. Long lives, 85 to 95, are not uncommon. There are nine resident registered medical men, all graduates of American colleges except two—Dr. Eldon Harvey, M.R.C.S., L.R.C.P., England, and Ettore Sarzana, M.D., Italy, L.S.A., London. There are ten army and five naval surgeons. There is a branch of the British Medical Association, before which the writer, by invitation, had the honor of making an address on narcotic inebriety. A general board of health is composed of the governor and council—the latter, nine, leading non-professional men of the colony. There are two health officers—a post-surgeon at St. George and a local physician at Hamilton; services paid by fees. Two coroners, non-medical men, are paid in the same way. Gaol surgeons at these places get $200 per year. Quarantine regulations are careful and complete.

The insane asylum here is a large building, once intended for college purposes, and contains forty beds. The attending physician is Dr. Hinson, the senior practitioner of Bermuda—salary $1,100.

Through the effort of Dr. Harvey, a handsome hospital cottage has been erected about half a mile from Hamilton. It may prove of much value should contagious disease occur among visitors. Nine-tenths of its cost was given by Americans. Great credit is due to Dr. Harvey for this good work. A new army hospital is being constructed at Camp Prospect, the central military post, two miles from town. It will admit one hundred.

The leading death cause is tuberculosis, mainly among the blacks. Forty cases occurred year before last; 40 last year. The mortuary report for 1890 included, debility 25, enteric fever 20, heart disease 20, whooping-cough 20, diarrhœa 18, pneumonia 15, old age 14, tetanus 10, still-births 28. There is much rum drinking, but little open drunk-

enness. There were two deaths each from alcoholism in 1889 and 1890.

Births and deaths are fully recorded. The former lead, making an annual increase in population—last year 241. Death certificates are not prerequisite for burial, but must be presented within a fortnight. The illegitimate births are many—during the last decade 953, of which 909 were black. The number last year was 84, the lowest, save once, since registration was adopted, twenty-five years ago—a hopeful index of bettering morals among them. There are six drug stores—one of them at St. George, twelve miles from Hamilton. Druggists are not examined. Any one, on payment of five shillings, can set up shop.

Climate has been thought, hitherto, the leading remedial factor for invalids in Bermuda, but a new Richard has lately entered the field. A band of Kickapoo Indians (?), made up of half-breeds and others from Quackland and elsewhere, swooped on the islands — an unheard-of visitation — some weeks ago. They pitched their tent hard by the town, posted walls and waste places with pictures of the noble red man in various attitudes of samaritan ministration, "laid low" during the day, and at night, by dint of so-called music, tight-rope antics, acrobatic acts, juggling feats and other "fetching" performances, drew the dusky natives in droves, and actually depleted them of $1,500 in one week—a big amount for those no better off in the world's wares than they are. Having dearthed this field, they stole away to St. George, worked that place for all it was worth—to them—and are now at Somerset for a season, after which they purpose a parting raid on Hamilton, and then set sail for the land of wooden nutmegs, whence they came.

An event so rare as to be the only one in the annals of Bermuda, was the recent trial—on an indictment for manslaughter for the alleged killing of a patient by overdosing with opium and belladonna—of one of the two colored physicians. The facts, as brought out at the inquest and trial, were that the doctor was called to a middle-aged colored man, ill with painful bowel obstruction, and prescribed:

℞

Tincti. opii.....
" belladon.....
Spts. chloroform.....
" ammon aromat.....aa gtt.v.

to each teaspoonful, with instructions to repeat every ten minutes till relieved. This was repeated, more or less regularly, and—to shorten the story—in thirty-six hours the man was narcotized, and, in forty-eight, gathered to his fathers. The doctor, a very intelligent-looking fellow, graduate of a western medical college, frankly stated in his certificate that death was due to bowel obstruction and over-dosing with opium; but the gossips got in some fine work, a hue went up, and an indictment followed. He plead not guilty. Expert evidence for the prosecution was given. A question by a juror disclosed the fact—vital for the defence and made the most of by his counsel—that the teaspoon used held nearly double the usual amount. There was little question that the man died from narcotic poisoning, but the evidence failed to prove criminal lack of medical care. The trial lasted five days. The jury was out twenty minutes. The doctor was acquitted.

It seems to us strange more medical men do not visit Bermuda. We have noted less than a dozen, and most of these from Brooklyn. Physicians might well set their patients an example in this regard, and by so doing induce many more to spend an outing here. The fact is few realize that less than sixty hours from New York is a lovely land, an evergreen isle, where roses bloom the year round out of doors, and the high tide of rose time is December; where malaria never comes; where frost and the white mantle of winter are unknown; and where the sleep-giving, health-bringing breezes, the panoramic beauty of sea and shore, and the quiet, restful life, combine to make halcyon days.

For insomnia, Bermuda is unique to do good. It is not the place for consumptives, nor for one far advanced in any wasting disease. It is a happy land for the neuralgic, and those coming back to health from acute disease. For the weary and worn, for the tired pilgrim along any line—be it brain or brawn—it is indeed a Mecca to which he may go with high hope of getting rest and relief.

Bermuda is, too, good for those not ill. Let the busy American doctor take a fortnight off, and a ten-days sojourn in these sun-lit isles, and our word for it, if conditions favor, he will lay in a stock of happy memories for many days to come.

The writer has been presenting a series of letters from Bermuda in a Brooklyn daily. One object was to induce those who might read them to visit this favored land. He will be glad to tell any one what he knows about this charming resort, and if, in so

doing, more of his confréres shall share in the pleasures he has enjoyed, he will be content.

J. B. MATTISON, M. D.

EDITOR OF THE MEDICAL AND SURGICAL REPORTER.—

My Dear Doctor:—I have been suffering the past fall and winter with gall-stone colic, the attacks coming on every three or four weeks. I could get relief from the usual remedies such as morphine, belladonna, chloroform, etc., but what I wanted to find was a remedy to prevent the formation of the gall-stones. I was advised by my old friend Dr. Job Bell, of Tennessee, to take gum guaiac and whiskey in the following proportions: Gum guaiac ℥ii, whiskey, Oj, and take one tablespoonful in water after each meal. I commenced taking the prescription and the result is I have gone five weeks longer without having an attack than I have since my first attack about six months ago. Before taking the remedy I would have a spell of billious colic every four weeks at the furthest, but usually every three weeks. It has now been nine weeks since the last attack.

The remedy improves the appetite, keeps the bowels open, and produces a copious flow of bile each day.

Dr. Bell is very enthusiastic about the merits of this drug. He says he has treated many cases in this way and has had excellent results.

The Dr. thinks it best to give the guaiac in whiskey as whiskey is less objectionable than alcohol for obvious reasons.

I write this feeling confident it will be of great use to the profession, and a boon to those who are suffering with this fearful malady.

Very truly,

J. F. BAGWELL, M. D.

BOOK REVIEWS.

A TEXT BOOK OF PRACTICAL THERAPEUTICS, WITH ESPECIAL REFERENCE TO THE APPLICATION OF REMEDIAL MEASURES TO DISEASES AND THEIR EMPLOYMENT UPON A RATIONAL BASIS. Second edition. Enlarged and revised. By HOBART AMORY HARE, M. D., B. Sc. Philadelphia, Lea Brothers & Co., 1891.

The evidence of the popularity of this work is shown by the fact that the first edition was exhausted within six months of its publication. Its value as a *Practical* "Therapeutics" is demonstrated by its adoption as a text book in a number of medical schools.

The present volume consists of 658 pages, and is divided into four parts. Part one is devoted to general therapeutic considerations, such as modes of administering drugs, dosage, idiosyncrasy, absorption of drugs and their duration of action, incompatibility, etc.

Part two takes up the consideration of the drugs of the pharmacopœia (U. S.), and such other remedies as are in general use, or are entitled to notice in a work on general therapeutics. Each agent is treated in alphabetical order, separately, and is discussed first, by a brief description of the drug, followed by an account of its mode of action, its application in disease, the methods of administration, and when occasion requires, the contraindication to its employment. In the case of the more powerful drugs, the toxicological symptoms and the treatment are given. Excellent tables are appended in some instances as a means of differential diagnosis between the actions of certain remedies and the symptoms of particular diseases, as in the article on alcohol, in which three tables are given differentiating alcoholism from opium poisoning, apoplexy, and the general paralysis of the insane. In this section (page 72), the author directs particular attention to the prevalent abuse, or rather misuse, of arsenic in the treatment of skin diseases—no distinction usually being made by the general practitioner between the *moist* and the *dry* varieties of these affections. It is only in the latter cases that the drug is indicated or does good. Arsenic is contraindicated in lesions associated with much proliferation of new cells and the exudation of serum, etc.

An important detail is not mentioned in the article on cocaine, in the description of its use in minor purgery as a local anæsthetic (p. 141). It is not alone necessary to employ a ligature in such instances, in order to control the circulation and to prevent undue absorption of the drug, but it is equally important *to allow free bleeding at the completion of the operation, but before the sutures are tied,* so that any excess of the cocaine may be washed out. The neglect of this point is a frequent cause of the untoward results, so often reported as following the employment of the drug in surgical practice to produce local anæsthesia.

In the respective articles, ergot (page 159) and eucalyptus (p. 166), notice might have been made of the therapeutic value of the first drug in the relief of eneuris, and in the second instance, of the relief afforded patients

suffering from sub-acute or chronic bronchitis, pharyngitis, etc., by the employment of the oil of eucalyptus as an inhalation.

Part third treats of remedial measures other than drugs, and also includes a valuable addition in the shape of an article on "Foods for the sick."

The fourth part consists of articles upon the treatment of diseases and symptoms; a table of doses and remedies; tables of relative weights and measures in the metric and apothecaries' systems; an index of drugs and remedial measures, and an index of diseases and remedies.

With this brief summary of Dr. Hare's book, we would close our remarks by restating a fact mentioned in the earlier part of this notice—that the work is essentially "*practical*" in every particular and, therefore, can be heartily recommended as a book for the student and general practitioner.

DIABETES: ITS CAUSES, SYMPTOMS, AND TREATMENT. By CHARLES W. PURDY, M. D. Philadelphia and London: F. A. Davis, 1890, pp. 184.

Among the monographs which are destined to uphold the dignity and repute of the medical profession in America, the work of Dr. Purdy must be granted a prominent position. Its excellence does not depend simply upon the practical and concise form of presentation of the subject, but as well upon the value of the original matter which is contained in the book.

The first consideration which excites the attention of the reader is the prominence accorded the features of the disease and its climatological study in the United States, the observations in these relations being based upon the personal experiences of the writer and upon data obtained from the census of 1880 of this country. From the statistics detailed Dr. Purdy concludes that there is a definite factor exerted upon the ætiology of this affection by the influence of climatic circumstances. Diabetes mellitus reaches its highest proportion in those parts of the country in which there is the lowest mean temperature, combined with a low barometric registration; on the contrary, its least proportion coincides with those portions of the country where the mean temperature is highest and the barometer is relatively high. A rare atmosphere, in Dr. Purdy's opinion, is favorable to the establishment and perpetuation of a glycosuria, in that it directly contributes to a lowered possibility of oxidation. On the contrary, the marked barometric pressure induced by dampness of the air is not without some deleterious influence, the conditions of excellence demanding a warm or moderate climate with high barometric registration and dry air. In the United States the highest mortality from diabetes is reached in the north-eastern hills and plateaus, especially in the state of Vermont, in which region the mean temperature is from 35° to 45° F. and the mean elevation 1500 feet; the lowest mortality is shown to be found (and from these studies this region is regarded as the most favorable climate possessed by the United States) in the South Atlantic coast, the southern interior plateau and the south-west central region. This range embraces, in part or in whole, the states of North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana, Arkansas and Texas. This region, in Dr. Purdy's view, furnishes, not only climatologically but also in the constant supply of foods suitable for the diabetic, the most striking advantages for the treatment of the disease to be found in any part of the inhabited globe.

The author looks upon diabetes mellitus as essentially a disturbance of the glycogenic function of the liver, by which there occurs an arrest of the transformation of certain forms of the food (the ultimate transformation being probably into fats) whereby these substances, because of their non-assimilability, are thrown out of the body in an intermediate form, sugar. In this hepatic disturbance there occurs a hyperæmic condition of the liver and a more or less engorged condition of the chylo-poietic viscera. Recently ascertained facts point also to an influence exerted by disturbance of the pancreatic function, in connection, however, with the hepatic disturbance; further, pathological states of certain portions of the central nervous system which preside over the hepatic vascular area may induce phenomenon of glycosuria.

Among the causes of the disease the author places heredity in a prominent position. Among the instances narrated under this head it is interesting to note, in view of the recent query of Schmitz as to the possibly infectious nature of this disease, the occurrence of diabetes in the father and the mother of one of the writer's cases. Richard Schmitz in the past year has discussed the possible transmission of diabetes mellitus from husband to wife or *vice versa*, and has pointed out the not infrequent occurrence of such instances. Besides heredity, as causative influences the author mentions the greater frequency of the disease in the male

sex, in the middle portions of life, the influence of over-eating, climate, various diseased conditions, and mental emotions.

In treating of the symptoms of the affection, the various phenomena are taken up as presented by the different systems of the body. Dr. Purdy calls attention to a very valuable modification of Fehling's reagent for the detection of urinary sugar by which he is enabled to keep the cupric sulphate solution indefinitely without change, and which consists briefly in the substitution of potassic or ammonium hydrate for the bitartrate in Fehling's solution and the addition of glycerine to the solution.

The work is particularly complete in the treatment of the disease. Dr. Purdy condemns all the common diabetic breads and relies upon ordinary home-made wheaten bread, preferring to diminish its quantity rather than to replace it by an unlimited amount of an article which may, and in most cases probably does contain a greater proportion of starch than the patient's usual home diet. He refuses his patients such beverages as tea and coffee, finding from experience that they contain a notable amount of sugar; and permits only the following list of drinks—water (including all mineral waters) Rhine wine, California Rislings and Chablis, New York and Ohio Catawbas, Rudai Imperial, Schreiber's "diatetic wine," whisky and gin. Of medicinal agents, arsenic, jambul, iodoform, ergot, the alkalies and opium are regarded favorably; antipyrin with others of its class is severly condemned.

Following the general consideration of the disease there occurs a section of clinical cases, detailed for the purpose of illustration of the statements made in the previous portions of the book. Finally, there is a chapter upon diabetes insipidus, which is more briefly considered and serves as a background for the more important disease, to the literature of which the author has in this work contributed a really valuable addition.

TREATMENT OF ERYSIPELAS.

Dr. Koch treated numerous cases of erysipelas with the following ointment:

℞

Creolin	5 i.
Iodoform	5 iii.
Lanolin	5 i.

This ointment is spread as an even, smooth layer over the affected skin and its surroundings, on an area of at least two to three inches to the outside of the inflamed parts. The whole is covered by a piece of mackintosh.

PERISCOPE.

THERAPEUTICS.

ARSENITE OF COPPER IN DIARRHŒA.

Dr. F. Hinz, in the *Journal de Méd. de Paris*, May 3, 1891, strongly advocates the use of arsenite of copper in diarrhœa. He prescribes the drug in the following formula:

℞

Arsenite of copper	gramme 0.05.
Water	grammes 90.0.

M. et sig. Half a teaspoonful every hour.

During the next day the remedy is only given four times. Recovery is usually rapid.

[We strongly suspect that Dr. Hinz has taken his idea from Dr. John Aulde, of Philadelphia, the latter gentleman having used the drug similarly for some time and having written extensively on the subject. ED. REPORTER.]

ACETANILID IN THE TREATMENT OF HARD AND SOFT ULCERATING CHANCRES.

Basilvitch, in the *Journal de Méd. de Paris*, May 10, 1891, reports three cases of ulcerating chancres—one hard, in a female, and two soft, in males—that he successfully treated with local applications of acetanilid. Healing was both rapid and complete. The drug's action was equally as good, if not better, than that of iodoform in similar cases. It possesses, also, two material advantages over iodoform, first, it is inodorous, second, it is comparatively cheap.

THE ANALGESIC ACTION OF ELECTRIC LIGHT.

Dr. Th. V. Stein, of Moskan reports in the *Deutsche Medicinal Zeitung*, April 6, 1891, fourteen cases illustrating the analgesic action of electric light. The results obtained are claimed to have been remakable. The electric light was applied by an especially devised reflector, designed by the author. In cases where the pain was located in the head or neck, these parts were illuminated for only 10 or 15 seconds, but other parts of the body were subjected to an illumination lasting five minutes or over, or until the patient complained of the intense heat. In a stubborn case of intercostal neuralgia in a woman one treatment resulted in a complete and lasting cure. The same results were observed in a case of lumbago, one of severe cough, one of rheumatism, etc.

THE TREATMENT OF PNEUMONIA.

Dr. W. Soltan Fenwick gives in the *Lancet* for January 31 and February 7, 1891, an analysis of a thousand cases of acute primary lobar pneumonia which were treated at the London Hospital between the years 1880 and 1890. Those cases in which the temperature ranged above 103° are for convenience classified as "sthenic," those in which the temperature remained below 103° are considered as "asthenic" in character. The treatment of the sthenic cases was of three kinds: 1. Expectant, consisting of the application of hot poultices to the chest and the internal use of expectorant and tonic remedies. Of the 493 cases in this class, 116 were fatal, or 23 per cent. 2. With quinine, consisting entirely of the use of quinine in large doses, 12 to 40 grains a day. Of 52 cases, 11 died, or 21 per cent. 3. Antipyretic. These cases were combated upon general antipyretic principles, similar to those employed in the treatment of other acute specific fevers. Only 10 cases were treated with antipyrine and phenacetin, hence the inquiry is confined to the results which attended the systematic efforts to control the symptom of fever by direct abstraction of heat. The various measures resorted to were the use of—

1. The ice bag. Of 26 patients so treated, 4 died, or 15 per cent.

2. The cold pack. Of 26 patients, 4 died, or 15 per cent.

3. Cold sponging. Of 65 patients, 8 died, or 12 per cent.

4. The ice-cradle. Of 43 patients, 3 died, or 7 per cent.

There were 285 cases of asthenic pneumonia. Of these, 240 were treated in the ordinary way with poultices, stimulants, and tonics; the deaths were 76, or 32 per cent. In 45 cases the treatment was supplemented by large doses of quinine; the mortality was 20 per cent.

In summing up the foregoing results, Dr. Fenwick observes that the termination in the fatal cases was almost invariably directly due to failure of the heart. There are two factors which are capable of producing the condition of cardiac insufficiency—an increased resistance to the propulsive action of the heart, and a progressive deterioration of its muscular substance. In acute pneumonia both these factors are present; the former in the increase of tension in the pulmonary circuit consequent on the consolidation of a portion of the lung, and the latter as a direct result of high temperature. The action of these two forces is to compel the heart to beat more forcibly and more quickly, while at the same time it is steadily deprived of the power to do either. Treatment should therefore be directed to one special object—viz., to economize cardiac force by minimizing the injurious influences of fever. He believes that this is the best accomplished in the sthenic cases by the use of cold sponging or the ice-cradle.

In pneumonia of the asthenic type cold should not be employed, but the treatment should be stimulating.

Dr. Fenwick adds, in conclusion, that the quantity of albumin in the urine during the first three days is of considerable prognostic value; of patients with a quarter albumin, 32 per cent. died; of those with a third, 52 per cent. died; and of those with a half, 82 per cent. died.—*N. Y. Med. Jour.*

METHYL-BLUE AS AN ANÆSTHETIC.

Pietrowski has verified the statement of Ehrlich that methyl-blue is possessed of anæsthetic power to a remarkable extent. He has administered it both by way of hypodermic injections and by the mouth, to ten cases, including patients suffering from acute rheumatism and neuralgia of the intercostal, supra-orbital and sciatic nerves, as well as from lumbago. In all of these cases the urine became first green and then blue. After these injections there was some redness and tumefaction and perhaps some pain. In every case the pain was diminished.—*Revue Internationale de Bibliographie.*

STRYCHNINE IN THE TREATMENT OF CHRONIC ALCOHOLISM.

Dr. V. N. Ergolski reports in *Vratch* for March 7, 1891, ten cases of chronic alcoholism treated with more or less marked success by means of strychnine. The following are two of the cases reported in this article: The first was that of a gardener, thirty-four years of age, who often drank to excess, but did not regard himself as intemperate, claiming that he drank only when he had plenty of money and was in good company. At the solicitation of his mother, however, he submitted himself to treatment. On the first day he received a hypodermic injection of $\frac{1}{70}$ grain of nitrate of strychnine, $\frac{1}{70}$ grain on the next day, and $\frac{1}{70}$ on the third and following days. During the entire course of treatment, and for two weeks afterward, the patient did not drink anything, giving as his excuse that he had no money; but his mother said that he had never gone for so long a time without liquor in twelve years. Finally he thought he would try once more how vodka tasted. But after taking two glasses he became very drunk,

had a violent headache, vomited profusely, and had to be taken home and put to bed. He tried the experiment again in a week or two, with the same result. He insisted, however, on resuming his old habits, saying that he did not want to lose his taste for drink, and began taking vodka, a few drops at a time, gradually increasing the dose until he could take his usual allowance without trouble. The second case was that of a railroad worker, who had been for ten years strongly addicted to brandy, so that every day he would take from a half to one bottle or more, feeling, unless he took this allowance, a great restlessness and a sense of drawing in the region of the stomach. He was anxious to overcome his habit, but had not the will-power to do so. The first day after coming under treatment he received a hypodermic injection of $\frac{1}{10}$ grain of nitrate of strychnine. Upon presenting himself the next day, he reported that he had had none of the restlessness or dragging at the stomach, although he had not touched a drop of vodka. Dr. Ergolski administered $\frac{1}{10}$ grain subcutaneously this and the seven following days, after which he dismissed the patient, giving him 1 grain of the remedy divided into sixty pills, of which he was instructed to take one a day every alternate week. On the fifth day of treatment the man attended the name-day festival of a relative, where he was pressed to join the others in drinking the health of the host. He felt, however, a loathing for liquor, and would not touch it although the company made sport of him for refusing. The patient reported to Dr. Ergolski at the end of fifteen months, at which time he was perfectly cured. The eight other cases were similar to these, in all of which there was some good effects noted—in some a permanent cure, though in a few there was a relapse from one cause or another. The author regards the remedy in the nature of a specific for chronic alcoholism, and declares, as his belief, that it is possible to cure even the most obstinate cases by means of it, although in cases of relapse it may be necessary to repeat the course of treatment once or twice.—*Med. Rec.*

MEDICINE.

A CARCINOMA DISAPPEARS WITH THE DEVELOPMENT OF PHTHISIS.

As yet we know little of the analogy of various diseases, except as the history of some interesting case affords us some evidence and furnishes us with material for speculation.

Dr. Sigg, of Andelfingen, Switzerland, has recently reported the following interesting case, which is quoted in the *Wiener Medicinishe Presse*, May, 10, 1891. The patient was a woman 33 years old, who had a painful swelling of the left breast. The growth was hard, nodulated, partly adherent to the skin, and painful on pressure; the axillary glands in the left side were swollen and hard. In August of 1883, the growth was removed, and axilla cleaned out. In November of the same year a new growth appeared, below the cicatrix of the old growth, which rapidly increased in size, necessitating the removal of the remaining portions of the mammary gland. This was done February 28, 1884. On August 31, 1884, a third operation was rendered necessary, owing to the appearance of new growths. In January 1885, several new nodules made their appearance, and in April of the same year, had increased so rapidly, that the left side, from the sternum to the scapula, and into the axilla, was infiltrated, and covered with a flat growth, which rendered every movement of the shoulder, or elbow, impossible. Over the region of the left breast there were also several nodules, some as large as a man's fist. At this time the patient developed a cough, and gradually the typical picture of pulmonary phthisis presented itself. Bacilli were found in the sputum. With the appearance of the cachectic stage, the carcinomatous infiltration began quickly to disappear, and within a few days before the patient's death, no sign of the carinoma remained, except a small growth the size of a nut. A microscopical examination proved this to be an epithelical-carcinoma.

INFECTIOUS EYE-LOTIONS.

Dr. Franke, at a recent meeting of the Medical Society of Hamburg, called attention to the fact, that the instillation of solutions of atropin, eserin, and cocaine into the eye, frequently gives rise to acute conjunctivitis. The reason of this is, he claims, that these solutions are not antiseptic, and generally contain mould or fungi. Franke has found that if these remedies are added in the desired proportion to a 1 : 10,000 solution of bichloride of mercury, they will be kept antiseptic for an indefinite period, and not give rise to any irritative symptoms. In practice the addition of 2 drops of a 1 per cent. solution of bichloride of mercury to 10 grammes of any ordinary eye-lotion, will have the desired effect.—*Deutsche Med.-Zeitung*, May 4, 1891.

SOME NOTES ON THE PRESENT EPIDEMIC OF INFLUENZA.

Dr. Allen Greenwood states that the following observations are taken from his notes of a number of cases, and from his own unpleasant acquaintance with "Grip" in Waltham.

The attack usually begins with a feeling of depression, followed by dull pains, often becoming severe in the limbs and back, and often with chilly sensations. In almost every case these symptoms have been followed in twenty-four hours by a severe headache and a feeling of soreness in the throat, with painful deglutition. The inflammatory process soon extends to the larynx, and the patient becomes hoarse or loses the voice entirely; and it is here that the most painful part of the attack (to myself and several others) has been, for the pain about the region of the larynx has been intense, resembling the pain of a bad toothache or earache.

In about twenty-four hours after the beginning of the throat symptoms, the patient begins to cough, and soon there comes a feeling of tightness and soreness about the chest, the feeling of tightness often amounting to a suffocative sensation that is very distressing. The cough is accompanied by a varying amount of expectoration of a white or yellowish-white frothy material, which is occasionally streaked with blood. The expectoration becomes much less on the second or third day after the cough begins, and the dry cough remaining may last a week or more.

There is often more or less coryza, and there was in most of the cases a symptom I had never seen before, namely, a severe, dull pain over the frontal sinuses, probably due to a congestion of the membrane lining the sinuses. In my own case this pain lasted several days, and was accompanied by a marked swelling and tenderness of the integument over the sinuses.

The evening temperature when first taken, usually after the throat symptoms were well established, varied between 100° and 103° F. It remained about the same for twenty-four or forty-eight hours, with morning remissions of one or two degrees, and then fell by lysis reaching normal on the fifth or sixth day. Two of the cases were followed by acute otitis media, requiring paracentesis and the usual after-treatment for such cases.

The attack usually leaves the patient very weak, and it is often several weeks before full health is regained.

Physical examination of the chest did not show much beyond the few usual signs of a acute bronchitis of the larger tubes. In examining the throat I was struck by the absence of any follicular deposits, the appearances being invariably those of acute inflammation of the tonsils and pharynx, the surface of the whole region posterior to the anterior pillars of the fauces looking like raw beef.

In speaking of treatment, I shall only mention those things which in my few cases have given the most relief.

In no case has treatment been begun on the first day; but for the severe headache of the second day antipyrine, in fifteen-grain doses, has served me well, and given much relief to patients.

For the sore throat and painful laryngitis, hot, moist applications are indicated, either in form of poultices or cloths rung out of hot water; and the relief thus afforded, as I can testify, is very grateful.

For the feeling of soreness and tightness in the chest, nothing gave so much relief as a clear mustard paste to the front of the chest, left on fifteen or twenty minutes till the skin was well reddened.

At night the patient should take ten grains of Dover's powder, which will probably ensure a good night's rest; and this may be repeated the following night.

As the expectoration ceases, the cough becomes useless and distressing to the patient, and to relieve this one of the anodyne cough mixtures may be given. I have had very good success with a combination of morphine and hydrocyanic acid, as in the following:

℞

Morph. sulph.	gr. ii.	
Ac. hydrocyan. dil.	℥ i.	
Syr. tolu	℥ ii.	
Syr. simp.	ad ℥ iv.	M.

Sig. Teaspoonful every three hours, for cough.

This will usually stop or relieve the cough so that it need not be taken more than two or three times a day after the first few doses. One patient did not follow directions, but continued the medicine after the cough had stopped until such marked physiological effects of the hydrocyanic acid appeared as to frighten her.

For the painful congestion in the frontal sinuses, clothes rung out in hot water and laid on the forehead gave relief, as did also antipyrine used in fifteen-grain doses.

From other physicians here I learned that the type of the disease as given above is similar to that observed by them.—*Boston Med. and Surg. Jour.*

In Tokiyo over 12,000 bodies were incinerated last year at a cost of $19,000.

SURGERY.

SOME PRACTICAL POINTS IN ABDOMINAL SURGERY.

Dr. Jno. H. McIntyre, in a paper read before the State Medical Association of Missouri, states that in his opinion, among anæsthetics, the safest and best is bichloride of methylene used in Junker's Inhaler. He has used it in laparotomy work for the past ten years without a single untoward sympton, and with the greatest satisfaction, and upon many occasions has put it to as severe a test as it is possible to put an anæsthetic.

By its use, anæsthesia can not only be promptly induced, but safely maintained for any desirable length of time, and it is rarely followed by nausea and vomiting.

By the use of the inhaler of Junker, overdosing is next to impossible, in reality the patient takes inspired air, charged with the vapor of bichloride of methylene, and it is surprising what a small quantity is required in doing a prolonged operation.

Short incisions constitute another point of excellence, and should never be extended beyond the point of necessity in removing a growth of given size without bruising the tissues. In removing the ovaries or fallopian tubes, or both, it is rarely that the ventral incision need be over two inches in extent.

In dealing with adhesions, perseverance by well directed effort will always succeed; remembering, however, that violence is always harmful, and the necessary force should be that of gentle momentum.

Intestinal adhesions, should be separated as far from the gut as possile, for by so doing the danger of hæmorrhage is much lessened; they should be carefully examined afterward, as the placing of a Lembert suture in the proper place at the opportune moment, will prevent the mortification of a future fecal fistula.

In the management of the pedicle he always uses Japanese cable silk, transfixing the tying the ordinary surgical knot, when dealing with large tumors; for removal of the appendages, he is partial to the Staffordshire Knot of Tait.

Drainage.—"When in doubt" he always drains, and prefers the Keith tube to all others, and he is a thorough believer in flushing the abdomen with a large quantity of hot distilled water; it is marvelous sometimes to see how many blood clots can thus be washed out, even after careful sponging, besides it is one of the best methods of relieving shock.

Closure of ventral wound can best be done with silk worm gut; it is the ideal suture, as it is round, smooth and very strong, and can be rendered perfectly aseptic. As it is rather stiff, it should be steeped for a few hours before using, in a solution of some kind, so that it can be tied tightly. It should be threaded at each end upon straight or slightly curved veterinary needles. The needle being held in the grasp of the Spencer-Wells needle holder, should be passed from within outward, always including the peritoneum. Sutures should be placed five or six to the inch. The frequent cause of ventral hernia following abdominal section, is an insufficient number of sutures.

After Management.—For the first twenty-four hours, nothing should be taken into the stomach, except a little hot water, bits of ice chewed or swallowed do not relieve thirst. The second day a little barley water may be allowed, and on the third day she can be promoted to a chicken wing, when afterwards, if everything goes well, almost any light diet may be allowed.

When pain is present, he uses but little morphia, on account of its tendency to arrest secretions; and thereby prevent the elimination of morbid material, but in its stead, for more than a year past, has used antikamnia, with happy effect. It soothes and tranquilizes, and lessens the tendency to rise of temperature.

Stitch-hole sinuses can best be obviated by early removal of the sutures. It is rarely that he allows sutures to remain in the ventral wound longer than the eighth day, and he often removes them as early as the sixth.

He who essays to do abdominal and pelvic operations, should by previous observation and training, be so fitted for his work, that when he comes into "action" he will be "ready for anything, and surprised at nothing."

The best place in which to obtain the highest grade of success, he thinks, is not in large general hospitals, neither is it in "the cottage by the wayside," but in a small especially prepared establishment, under the absolute control of experienced management.

EXCISION OF PORTIONS OF THE LUNGS OF DOGS.

In view of the universal interest excited in relation to tuberculosis in all its now recognized manifestations by the announcement that Koch's tuberculin acted upon tuberculous tissue, causing its death *in situ*, but not rendering the necrotic tissue innocuous, it occurred to the members of the Still-

Medical Society to undertake the following research, which was performed by Bolgiano, Patek and Sailer in the Physiological Laboratory of the University of Pennsylvania:

A certain number of dogs were set aside for experimental research. The general plan of operation first adopted was to resect one or more ribs, draw out and ligate a lobe of the lung, cut off a portion and return the lung into the cavity. A catgut drain was then introduced into the thoracic cavity, and the pleura, intercostal muscles and skin was sutured. Of four animals experimented upon one died upon the table, two on the second day after the operation, and one not until the fifth day. Autopsies showed gangrene of the stump and empyema.

A different operative technique was then adopted. The sight of operation, previously selected in accordance with results obtained on the cadaver under forced respirations, was shaved and carefully disinfected. An incision about two inches long was made down to the intercostal muscles, and the tissues were dissected back a short distance on each side. A quick cut, about one and a half inches long, was then made through the intercostal muscles and pleura. Retractors were immediately inserted, and the ribs were drawn apart by an assistant, while the operator thrust in a pair of hæmostatic forceps in the direction previously determined, seized the lobe of the lung, drew it out and transfixed it with a sharp probe. As soon as this was accomplished the retractors were withdrawn, allowing the ribs to close upon the lung tissue, the probe preventing retraction during inspiration. The external portion of the lung was now removed by a V-incision. A needle, threaded with antiseptic gut, was passed through the intercostal muscle, pleura and tissue of the lung beneath the incision, and out through the pleura and intercostal muscle of the other side. These sutures were repeated about one-eighth of an inch apart until the wound in the thorax was closed, the wound in the lung being closed at the same time. A catgut drain was now laid over the wound, and the edges of the skin were brought together. Owing to the difficulty experienced in controlling the dogs, it was found necessary to dress the wound with a solution of collodion and iodoform in ether upon a matrix of cotton.

By this method three dogs were operated upon with most satisfactory results. During the operation shock was not experienced, and but little hæmorrhage occurred. In each case the dogs reacted well. Respirations were at first somewhat rapid, and there was an insignificant rise of temperature during the twenty-four hours following the operation. The appetite was good throughout.

One dog was killed and examined on the tenth day after the operation, the trachea being ligated previous to the opening of the thorax to prevent collapse of the lungs. The lung was found to have healed perfectly to the thoracic wall without the occurrence of circumjacent pleurisy. The pneumothorax had been wholly absorbed and the function of the lung restored.

Three weeks after operation the second dog was killed and the thorax opened under forced respiration. The wound in the lung had healed completely, leaving a small white cicatrix, and the lung itself had become detached from the thoracic wall. The pneumothorax had been wholly absorbed and the function of the lung completely restored. Indeed, the result may be looked upon as a perfect cure. In both instances about 0.5 gram of lung tissue was removed from the lower lobe of the right lung.

From the third dog the whole of the upper lobe of the left lung was removed—a piece about three inches long, and weighing 5 grams. It was necessary in this case to ligate the bronchial artery, but the operation was performed without further complications. The dog recovered promptly and is now living in excellent condition.

We think that we may fairly consider these results as indicating a thoroughly satisfactory method of excising portions of the lung from dogs. Whether it is equally applicable to human beings, experience alone can demonstrate. Reasoning *a priori* it would seem that this technique might be adopted in surgery, for none of the steps depend upon any anatomical peculiarity of the subject. What result it promises it is, of course, impossible to say, but the beneficial results of operative interference in tubercular peritonitis strongly indicate that much good may come from surgical interference even when such important viscera as the lungs are involved.—*Univ. Med. Mag.*

GYNÆCOLOGY.

SALICYLATE OF SODA AS AN EMMENAGOGUE.

Dr. C. Mettenheimer speaks highly of salicylate of soda as an emmenagogue. He bases his opinion on a series of cases, one of

which is reported in the *Allgemeine Med. Central-Zeitung*, May 6, 1891.

The patient was a married woman, 35 years of age, and of vigorous constitution. During the prevalency of the grippe she caught cold, and complained of chills, pains in the limbs, headache, loss of appetite, pain in the eye-balls and great lassitude. The symptoms were not severe, and the febrile symptoms were very slight. The following prescription was given:

℞ Natron. salicyl..... 6.0 grammes.
Aq. dest ..... 75.0 grammes.
Syr. aurant. cort..... 25.0 grammes.

M. et Sig. One tablespoonful every hour until perspiration occurs.

After the patient had taken two doses she began to perspire, and also her monthly period appeared, which had been delayed for over a week. Otherwise she had always been most regular. The menses followed their normal course, and the patient made a speedy recovery.

ICHTHIOL IN DISEASES OF THE GENITALIA OF FEMALES.

Dr. Richard Bloch, in the *Journal de Med. de Paris*, May 10, 1891, speaks most highly of the value of ichthiol in the treatment of various inflammatory diseases of the female genitalia. He considers it far superior to nitrate of silver, creolin or carbolic acid. Dr. Bloch bases his conclusions on a long list of cases in which the drug has proved itself of signal service. It seems to have a specific action in diseases of genital mucous membranes, but produces no local or general reaction, and is not in the least toxic. Intra-uterine injections of a 10 per cent. solution of ichthiol in glycerine are of great value and produce no untoward symptoms.

The application of pure ichthiol to the vaginal mucous membrane produces slight erosions, and therefore occasion some pain.

The drug diminishes both vaginal and uterine discharges. In acute inflammations, whether blennorrhagic or not, it is most efficacious. In metritis of the cervix it is most valuable, and in cervical erosions the application of the pure drug will cause prompt healing.

TACHYCARDIA AT THE MENOPAUSE.

It is not many weeks ago that the subject of rapid pulse received attention in our columns, but of the numerous authors cited, none had studied the pnenomenon in connection with the climacteric. This study has occupied the attention of Professor Kisch, of the Prague faculty, a resident of Marienbad, and he has made it the basis of an able article in a recent number of the *Prager Medicinische Wochenschrift*. Marienbad is a well-known resort for women approaching the change of life, and the author has had ample opportunities for studying the varied and complex nervous and circulatory disturbances of that period. As his conception of tachycardia differs somewhat from that of other reliable observers, it may be well to give his definition of it. He defines it as a purely nervous affection, not dependent upon any organic disease of the heart and blood-vessels, manifesting itself in a change of the motor fuction of the heart, and making itself evident in a decided, at times extraordinary, increase of the frequency of the heart's contractions. Although the various morbid phenomena attendant upon the change of life have received apple attention, this functional affection of the heart has gone almost unnoticed. Stokes, however, in his well-known work on *Diseases of the Heart*, mentions a form of palpitation at the menopause that is at times attended with paroxysmal attacks of great rapidity of the pulse.

Kisch's clinical picture of the affection is as follows: At the time of the menopause, occasionally after the cessation of the menses, but most frequently between the ages of forty and fifty years, when the menstrual flow is beginning to show signs of change, paroxysmal attacks of palpitation may occur in women whose heart's action has previously been quite normal. These attacks sometimes come on without any provocation, and at other times they are evoked by slight causes, such as would have no effect in a normal state of health. The attacks may come on while the patient is in any posture—walking, sitting, or lying down, and even during sleep. The subjective symptoms accompanying the attacks are a feeling of oppression and of anxiety, throbbing in the carotids and in the abdominal aorta, severe headache, and fugitive sensations of heat and of a rush of blood to the head. Occasionally there are noises in the ears, flashes of light before the eyes, and dizziness, and, in rare cases, syncope may occur. Objectively, it is found that the pulse numbers from 120 to 150, and may even reach 200. In most cases it is full, powerful, and regular. The sphygmographic tracings show a high pulse wave, a rapid and abrupt rise of the ascending line, and an equally rapid and abrupt fall of the descending line. Redness of the face, neck, and chest is the contrary, there was a tendency to plethora, and the patient had a dread of a stroke of apoplexy. The duration of the

affection may vary from a few weeks to two years and even longer.

In the tachycardia of the menopause the author thinks the ætiological facor is hyperplasia of the ovarian stroma. This increase of connective tissue in certain predisposed individuals, acts in some way, unknown as yet, upon the terminal nerves of the ovarian tissue and, through them, in a reflex manner upon the sympathetic nerve—the accelerator of the heart. This assumption receives support from the fact that tachycardia is frequently seen after the operation for the removal of the ovaries, which is followed by a shrinking process of the internal genital organs. In the way of treatment, the author has obtained the best results from a systematic course of mild purgatives, suitable dietetic and hygienic regimen, such as mountain air, a bland diet, and active bodily exercise, and wet applications to the lower part of the abdomen. A course of some weeks at Marienbad is usually followed by improvement. Small doses of the bromides generally afford relief from the unpleasant sensations attending the attacks.—*N. Y. Med. Jour.*

OBSTETRICS.

UNCONSCIOUS PARTURITION IN A PRIMIPARA.

A case of high obstetric and medico-legal interest is to be found in the *Archives de Tocologie* for November. Physiologically painless parturition is rare. Tarnier has related some cases, including one instance where a Canadian woman occasionally dropped a baby on the ground, at term, without noticing it. In Howard's case labor took two hours; the patient was reading a book till a quarter of an hour before the child was delivered, which event occurred after some straining, not sufficient to make her cry out. In Dr. Brunon's case, newly reported, a married woman, aged twenty-two, had a troublesome cough one day shortly before term. The coughing was accompanied with lumbar pains, which increased. At eleven o'clock in the evening the patient tried to pass a motion. She sat over one hour in the closet, believing that her pains signified painful defecation. Then she went to bed. At half-past one o'clock she woke up feeling a desire to pass a motion, with lumbar pains such as she had felt before when constipated. As she rose to go to stool a smart lumbar pain occurred, and she felt something between her thighs. On handling it she found, much to her surprise, that it was the head of her first-born. She declared to Dr. Brunon that the pains were entirely lumbar, she had no colicky sensations, and none of the expulsive pains usually so severe, especially in primiparæ. The desire to defecate was strong, and she stated that the child might have been born into the pan of the closet without her recognizing the truth of her condition till the moment of its delivery. The patient was an intelligent well-educated woman, free from any neurosis. This case proves that in the case of an inexperienced person an infant might be expelled into the water in the pan of a closet without any intention of infanticide on the part of the mother.—*Epitome.*

THE NECESSITY FOR IMMEDIATE SURGICAL INTERVENTION IN LACERATIONS OF THE PERINÆUM.

The misfortune which has just happened to an unfortunate practitioner, who was mulcted damages to the amount of nine hundred dollars and costs by the Superior Court for neglecting a lacerated perinæum, should be a lesson to every accoucheur in this country. It was shown that the laceration was complete, extending into the rectum, and had been followed by procidentia of the uterus and other distressing accidents.

The duty of attending to all extensive lacerations of the perinæum at the time when the lesions are fresh is insisted upon by the best obstetrical writers, and it is certainly the practice of the most successful obstetricians in this country to immediately put in three or more deep stitches, thus approximating and keeping in apposition the lacerated parts till union takes place. It matters little what material is used for the sutures; some use chromacized catgut, and make a deep continuous suture, and certainly catgut has in many instances proved to be sufficiently enduring; others prefer silk, others silver wire. Every physician has, or ought to have, in his pocket-surgical-case, ligatures and curved needles, and if a sufficiency of interrupted sutures are inserted immediately after confinement, the old-fashioned quilt suture may well be dispensed with. It will not always be necessary to give the patient ether in order to insert the stitches, though some nervous and susceptible subjects may require it. It is true that after a long and difficult confinement case, the medical attendant is generally tired out and shrinks from another operation, especially where anæsthesia is required, but he must muster strength and nerve for the occasion if he

would escape liability to a suit for malpractice; and if he inserts a few stitches he will save himself from the imputation of ignorance or carelessness. Modern juries have not the name of being very tender to the feelings, reputations or pockets of physicians, and it goes without saying that the most vigilant and attentive will be the least likely to be "caught napping."

There are one or two errors that should be cleared away, lest they should be subterfuges for the careless. The one is that tying the knees of the patient together will answer the same end as sutures. "Only a very credulous person," says Lusk, "really believes that he has witnessed union by first intention in extensive ruptures as the result of tying the knees together, and enjoining rest upon the side. The action of the transversi-perinei muscles tends to draw the torn surfaces apart. Moreover, the necessity of separating the knees in passing urine, and to enable the nurse to clean the genitalia, makes it impossible to keep them in contact for any lengthened period."

The other mistaken notion is that primary perineorrhaphy rarely succeeds, "that the perinæum is not merely torn but is contused and mangled, and that the previously œdematous and infiltrated tissues are predisposed to gangrene, and consequently are in the worst possible condition for immediate union" (Charpentier). Moreover, it is said that the lochial discharge will always be an obstacle to the union by first intention.

According to the experience of very many who have tried the immediate operation, and who have seldom or never failed to obtain good union, if due pains toward cleanliness and antisepsis are taken, no such unfavorable result as Charpentier points out need ever be feared. Certainly, Charpentier's American editor warmly favors the immediate repair of any laceration beyond the first degree, for the reason that thus a possible entrance sight for septic matter is prevented, and also because the operation is a simple affair after delivery, and more extensive and complicated, the longer we wait. He recommends that in case of laceration to the second degree only one deep silk or wire suture should be used; if the rent be deeper, three to five will be needed. In any event, the patient should be placed on her side, a wad of absorbent cotton inserted into the vagina to catch the discharges, the wound carefully washed and trimmed of jagged shreds, and then, guided by the finger in the rectum, the suture is passed deeply around, at one-half inch from the margins. The line of suture should be dusted with iodoform, and a narrow strip of cotton laid along the perinæum and the posterior vaginal wall. The after-treatment will consist in dusting with iodoform twice daily, and replacing the strip of cotton by a fresh piece till the sixth or seventh day, when the sutures may be removed.—*Bost. Med. Surg. Jour.*

PÆDIATRICS.

TREATMENT OF DIPHTHERIA BY MERCURIAL INUNCTIONS.

Smakowsky, in the *Allgemeine Med. Central-Zeitung*, May 13, 1891, reports three cases of diphtheria, which recovered after inunctions of mercurial ointment. Every hour 4 grammes of mercurial ointment were rubbed into the skin of different parts of the body, as in the treatment of syphilis. In this way the patient got, in all, about 30 grammes daily. The only other treatment that was used was gargling with a solution of chlorate of potash. The treatment lasts for one day only. If there is any relapse it may be repeated. Unfortunately the treatment is of little value in the treatment of infants, since they cannot gargle. The patients treated were from seven to eight years of age.

QUININE IN WHOOPING-COUGH.

Professor Emil Ungar, advocates the free use of quinine in whooping-cough (*Deutsche medicinische Wochenschrift*, No. 18, 1891), having used it with much success during several epidemics in the last six years. He attributed the great differences of opinion as to its value which have prevailed amongst previous observers to the difference in the dose employed. Large doses are necessary, and, suiting the exact quantity to the age of the patient, he advises the use of from 16 to 22 grains per diem, in divided doses. Even to children below three months of age he would administer ½ of a grain at each dose. These large quantities are only given for a few days, and as improvement begins the dose is diminished, and is given twice or only once a day instead of three times. This diminution should be effected slowly. Dr. Engar believes that children will bear relatively larger doses than adults, and has had no experience of the deafness or disturbed digestion which the drug is said to have produced in the hands of other observers. In his cases the vomiting, after the paroxysm, was rapidly stopped, and appetite

and digestive power seemed to be improved. The recorded cases of aural disturbance are for the most part in adult persons, and not in children. No untoward results of the treatment occurred in his practice, the only symptom presumably attributable to the equinine being the occurrence of very rapid cardiac action in one case. The main difficulty in the way of the administration of quinine to very young children is its bitter taste. Perseverance in many cases was rewarded by the children actually becoming fond of it, although almost all rebelled at first. The struggle induced during the swallowing of the medicine is apt to produce a fit of coughing, followed by retching and vomiting. In order to avoid this occurrence it is advisable to give the quinine directly after a paroxyism has taken place. To older children the quinine may be given in capsules. Administration *per rectum* is not satisfactory. By subcutaneous injection good results may be obtained, a neutral hydrochlorate being used, which is fairly oluble in water. The curative effects of quinine, however administered, are not apparent immediately, except in a few instances. As a rule, from three to six days elapse before the severity of the attack begins to diminish and the vomiting to cease. The disease then appears to run a milder course, and at the end of a fortnight the attacks are slight and infrequent. The tendency to complications, broncho-pneumonia, etc., is lessened, and improvement may be looked for in the large majority, though not in all cases.—*Brit. Med. Jour.*

THE SCARLET FEVER TONGUE.

The method followed by Dr. Newman was to sketch the tongue as soon as the diagnosis of scarlet fever was made, and after two or three days to compare its condition with the sketch already made. This was done in forty-eight cases, the chief symptoms of the disease being noted at the same time. The mucous membrane of the tongue passed through three stages: 1. Swelling and cloudiness of the epithelium; 2. desquamation; 3. regeneration of the lost epithelium. The first thing noted in the scarlet fever tongue is a swelling of the entire mucous membrane, giving rise to longitudinal folds and channels, easily distinguished from the folds noted in bulbar paralysis by the consistency of the tongue. The cloudiness of the epithelium gives rise to the changed color of the tongue; it appears grayish-white, white, or yellowish-white—that is, the tongue is coated. The back of the tongue is chiefly affected, the sides and tip being red. The desquamation does not take place as uniformly over the tongue as the other processes. It commences on the papillæ fungi-formes. These latter appear as submiliary or milary round, dusky-red dots, surrounded by a white area. Thus the tongue gets its strawberry appearance. In the third stage the sides of the tongue, and more particularly its tip, retain their red appearance and strawberry aspect longer than other parts of the tongue. The new epithelial layer may be so thick that the tongue appears coated anew. The swelling gradually goes away. The above is the usual course, but there may be departures from it. In two cases the dulling of the epithelium was absent, and the desquamation excessive, so that the longitudinal muscle bundles were seen. In another case, the epithelium was only detached in part, and a new layer developed quickly, so that the tongue appeared coated throughout. It resembled a dyspeptic tongue. The author says that the fungiform papillæ appeared round and erect; whereas in the dyspeptic tongue they are elongated, and slope toward the tip of the tongue. Generally speaking, the digestive troubles cause the tongue to be coated before the scarlet fever process has had time to affect it. If scarlet fever be combined with a septic condition, the latter determines the condition of the tongue. As the new infection appears early or late, so is the scarlet fever process interrupted. Generally speaking, the tongue, after losing its epithelium, developes a strawberry appearance, and then becomes dry. Bleeding cracks may be seen, which can lead to deep ulceration, or true diphtheritic membrane may appear. Out of the 48 cases the tongue was typical in 38. In 4 cases, one or two of the stages were only very slightly developed; and in 6, the typical scarlet fever tongue was altogether absent. Of these 6, there was severe gastric disturbance in 2; another case was in a chlorotic girl; in the fourth case there were symptoms of septicæmia, and death on the fourth day; and in the fifth and sixth cases the tongue was quite unaltered. Thus it would certainly appear that the scarlet fever tongue is a tolerably frequent occurrence in the disease, and that when absent, complication or previous illness has altered the tongue in other ways. The tongue recovers its normal state with the cessation of the fever. In the majority of cases the tongue had lost its epithelium, and had become strawberry in three to five days. There is no proportionate rela-

tion between the intensity of the scarlet fever poison as it affects the skin and tongue. Both processes are probable brought about in the same way, as their tolerably equal occurrence and their appearance much about the same time would suggest; and again, certain departures from the ordinary have shown a peculiar resemblance. Thus in one case with a puerpuric rash, the same was noted on the tongue; and in another, where syphilis was present as well, pustules were seen on the tongue as well as on the skin. Thus this condition of tongue, though not always present, is observed in many cases. It is, however, of less value than it might be, as it does not appear before the fourth day or so, and it may certainly be present in other illnesses.—*Deutsches Archiv fur Klinische Medicin.*

HYGIENE.

DR. KLEIN ON BACTERIA.

The first of a series of three lectures on Bacteria; their Nature and Functions, was delivered at the Royal Institution on Tuesday last by Dr. E. Klein, F.R.S. He said that perhaps in no branch of biological science had advances in the methods of research within the last twenty-five or thirty years been so enormous as in this subject. In 1828 Ehrenberg recognized the existence in water of minute mobile organisms which he considered to belong to the group of animalculæ known as infusoria, an assumption which was now known to be erroneous. In 1837 Schwann demonstrated the presence in atmospheric air and in dust of living microscopic beings, which he showed by direct experiment to be endowed with the power of producing in certain fluids those chemical changes termed alcoholic fermentation or putrefaction. Pasteur fully established the proposition that the different fermentations, such as alcoholic, butyric, acetous, mucous, and lactous fermentations, and also the decomposition of putrescible matter, were caused by definite and different species of such minute living beings—microbes,—and that without them such changes did not occur. This proposition implied that these changes were dependent on and ultimately bound up with the life and growth of these microbes, and if these were prevented from gaining access to such fermentative matters, they would remain unchanged or sterile. This was the principle which Sir Joseph Lister had applied in surgery, with the well-known brilliant results. The *role* of these microbes in atmospheric air had been minutely worked out and beautifully illustrated by Professor Tyndall, whose share in finally establishing that with these simple organisms, belonging almost to the world of the infinitely small, the same fundamental principle obtains as in other living organisms of plant and animal life, be they ever so large and complex—namely, that each organism had descended from an antecedent parent organism, and that no such thing as their origin from non-living matter occurred. Within comparatively recent times it had been shown that a variety of the most important and extensive processes of oxidation and reduction occur in nature, such as the oxidation and resolution of dead animal and vegetable matter, the breaking up of complex nitrogenous materials—such as albuminous substances, and their ultimate change into nitrites and nitrates, so essential to the life and growth of plants; that specific fermentation, so important in food stuffs and articles of diet, and many other processes are caused by, and intimately connected with, the growth and life of microbes. Though the importance of some species as useful agencies in nature is recognized, the importance of other species, as being the cause of disease affecting plants, animals, and man, is not less. The term micro-parasite is given to this latter group. Amongst the microbes there is one great group to be dealt with in particular, called "bacteria," because it possesses more or less the shape of a minute rod. Like the true or higher fungi, they are free from chlorophyll, and are composed of cells, a cellular membrane with living matter or protoplasm within, and they multiply by fission, for which reason they are called "fission fungi." Bacteria could then be defined as microscopic elementary organisms, composed of a cellulose investment of the protoplasmic contents, and which multiply by simple fission. They are classified into micrococci or cocci, bacilli and spiral vibriones, according to whether they are spherical, cylindrical, or curved and spiral. The lecturer exhibited a large number of microphotographs of bacteria, prepared by Mr. Andrew Pringle and Dr. Bousfield.

All these organisms, when they have found suitable nidus, multiply with enormous rapidity. It has, for example, been found from observation—all conditions of moisture, medium, and temperature being favorable—that some multiply in twenty minutes, others in thirty minutes, and others in forty minutes. Staphylococcus

aureus, which in its growth produces a peculiar golden-colored filament, grows with great rapidity when sown in a medium-like, faintly alkaline broth at a temperature of 37°C. Into a sterile broth tube a definite number of organisms are put—say, eight cocci per cubic centimeter. If placed in an incubator for twenty-four hours at 37°C. and then counted, it is found that 1 cc. contains 640,000—that is to say, one organism has multiplied eighty thousand-fold in the first twenty-four hours. It would not be expected that the same rate would obtain in the second twenty-four hours, because the material had been used up. After forty-eight hours' growth the counting yielded 248 millions per cubic centimeter—that is, only four hundredfold. In seventy-two hours it was found that there were 1184 millions per cubic centimeter—that is to say, during the last day each had multiplied only fivefold. As the material is used up the rate of multiplication decreases. Another instance of the rapidity of growth was given. A rabbit was inoculated subcutaneously with 20,000 bacilli of fowl cholera, and died in twenty-four hours. It was found that 15,150,000 microbes were contained in 1 cc. of the blood of the animal. The whole of the blood contained twelve hundred millions, showing that each bacillus in twenty-four hours had multiplied sixty thousand times. Those organisms which have their habitat in ordinary temperatures grow very rapidly. Professor Ferdinand Cohn was the first to study the rate of multiplication on the hay bacillus. He calculated that in two days the number of these would be so great that the whole Atlantic Ocean would be densely peopled by them if there was sufficient nutriment, which, fortunately, there is not, and therefore many of them had to go to the wall.

By the motility of bacteria is understood active locomotion. They spin round, they dart to and fro, and pass rapidly over the field of the microscope, and that is on account of their possessing one, two, three, or even a multitude of fine hairs. The organism of typhoid fever possesses several of these flapellæ. It has been shown that for retaining this motility a plentiful supply of oxygen is required. If, in a chamber, at one end oxygen is supplied, and at the other nitrogen or hydrogen gas, the organisms will all move towards the end where the oxygen is. If the oxygen is replaced by nitrogen or hydrogen the movement gradually ceases. If water is covered with a scum, it is most probably a motile bacillus which grows in the fluid, and which is driven to the surface, where it can derive the best supply of oxygen. In many cases the motility of the organisms is interfered with by their own chemical products.

Within certain of these organisms, but not in all, are formed peculiar corpuscles, which bear the same relation to the organisms as the seed does to the plant. This spore formation is almost entirely limited to the order of bacilli, and in this group there are very many species which do not possess this power. In a number of different species of bacilli, some of which are capable of forming spores and others not, those which have this power may look on very quietly, while those that do not will exhaust all the nutritive material present, growth and multiplication will then cease, and they will gradually die away. Those which form spores have a much better chance of bringing forth new generations than the others.

When organisms do not find suitable materials for their growth, certain changes are brought about called "involution changes." When the bacillus ceases to possess that high degree of vitality that the normal typical bacillus possesses, it gradually undergoes changes which lead to its death. Illustrations were given of what had been described as involution changes, but which were not so. For instance, tubercle bacilli grown under not very favorable conditions may be swollen, and others may appear branched. Some observers took these changes to indicate the death of the organism, but the lecturer was not quite sure that such were "involution changes."

In all these considerations, particularly in reference to the formation of spores, there were a number of facts of very considerable practical importance. The germination of those organisms which form spores takes place on the same principles as the germination of the spores in the higher fungi. The envelope is broken, the protoplasm contained within it shoots out in the shape of a rod, which when it is fully formed elongates, divides and multiplies as in the case of the parent. In this way one bacillus, by repeated multiplication, forms a new crop. When these have reached a certain phase of development they again form spores which go to start a new generation. These spores have a much greater power of resistance than is possessed by the non-spore-bearing organisms, and can withstand high temperature, dryness and the influence of light, so much so that it has become almost a recognized method of determining whether a par-

ticular species of bacilli forms spores by subjecting the suspected organism to a temperature of 95° C. or 100° C. If they survive this exposure, and if they survive drying, it may be taken as established that the growth is spore-forming.—*Lancet.*

MEDICAL CHEMISTRY.

THE ALKALINITY OF THE BLOOD UNDER NORMAL AND PATHOLOGICAL CONDITIONS.

E. Pieper (*Arch. f. Pathol. Anat.*, 116, 337; *Ber. Deut. Chem. Ges.*, 23, 666) found that the alkalinity of the blood varies within narrow limits. The blood of children is less alkaline, in reaction, than that of adults; of women, less alkaline than of men. The alkalinity of the blood is increased during *digestion, muscular activity* and *vomiting.* The spasms of strychnine poisoning cause a decrease.

The author states that in *leukemia, diabetes mellitus, arthritis deformans, chronic articular rheumatism, anemia, cancerous cachexia uremia,* and in fevers the alkalinity of the blood is, as a rule, decreased, while in chlorosis it is increased.

ESTIMATION OF NITRATES AND NITRITES IN WATER BY ELECTROLYSIS.

At the recent annual meeting of the Bristol (Eng.) Pharmaceutical Association, G. F. Schacht, presented a paper on this subject. After alluding to the importance of being able to determine the wholesomeness of potable water, he discussed as his special point in such determination a recent suggestion to employ a "couple" of aluminium and mercury for the evolution of the hydrogen in the well-known process for the estimation of nitrogen existing as nitrates and nitrites in the sample. Messrs. Ormandy and Cohen had published this suggestion, and their paper had appeared in the *Journal of the Chemical Society* for September of last year. He had taken some pains to assure himself of the accuracy of the method, and, with the modifications to which he would presently refer, it became so easy of execution that he recommended its adoption with confidence. Mr. Schacht then proceded to show the process in detail, and to describe it thus: Measure 100 c. c. of the sample into a plain upright glass vessel of capacity equal to about 130 c. c.; take a strip of aluminium foil (about three inches of ordinary ribbon= 0.4 gram), clean both surfaces by rubbing with tow dipped in liquor sodæ, wash thoroughly and dip it into a solution of mercuric chloride (half a saturated solution and half water) for one minute. A deposit of mercury takes place upon the aluminium, and a "couple" is formed. Wash it well under the tap, put it at once into the 100 c. c. of the sample, and cover the glass vessel loosely. Let these react until the metals become a deposit and no more gas is evolved. Gently stir the mixture and allow the deposit to subside. Take 10 c. c. of the clear supernatant liquid, dilute with 90 c.c. of pure water, and add 1 c.c. of Nessler's solution. Note the color. Perform a comparison experiment in the usual way with standard solution of ammonium chloride 0.0001 gram of NH to each c.c. Then x being the number of c.c. of solution required $0.0001 \times x \times 10 \times 700$=grains per gallon of ammonia, and this figure multiplied by 0.828=grains per gallon of nitrogen. In experiments which aim for exact results, it is better to close the mouth of the vessel with an india rubber stopper through which passes a glass tube, bent so as to allow the gasses to pass through a small quantity of water, which should be mixed with the sample before the final stirring. The author submitted a table of results of experiments, which showed that great accuracy could be attained by this process.

NEWS AND MISCELLANY.

ANATOMY AT OXFORD UNIVERSITY.

A grant of $35,000 has been asked by the Convocation to procure permanent accommodation for the teaching of anatomy.

DR. LASSAR.

The French Government has conferred the Order of the Legion of Honor on Dr. O. Lassar, the General Secretary of the Tenth International Medical Congress, held in Berlin in 1890.

THE CHICAGO MEDICAL RECORD.

This is the title of a new medical monthly edited by Dr. Archibald Church. It is well printed and contains a number of valuable original articles, together with society reports, etc.

THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF TEXAS.

The Medical Department of the University of Texas, will open its doors in the Autumn

of this year. Dr. Thos. D. Wooton, of Austin, is the Regent. A large Hospital will be adjacent to the school, and every effort is promised to make the school one of very high standard.

RESIGNATION OF SURGEON-GENERAL JOHN B. HAMILTON.

Dr. John B. Hamilton, Surgeon-General of the Marine Hospital Service, has resigned to accept the chair of Surgery and Surgical Pathology, in the Rush Medical College, of Chicago. Dr. Walter Wyman, who has been his chief assistant, has been promoted to the vacant position.

THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

At a recent meeting of the Directors of the New York Post-Graduate Medical School and Hospital, H. J. Boldt, M. D., was made Professor of Diseases of Women; William James Morton, M. D., Professor of Electrotherapeutics, and Aug. Caillé, M. D., Professor of Diseases of Children.

A NEW CREMATORY.

The incineration of the dead becomes more and more popular. Crematories are rapidly increasing in number in all civilized countries. One of the most important structures of this kind will be at Heidelburg, a site having been given by the municipality for the purpose. The cost of erection is estimated to be over $10,000.

THE UNIVERSITY OF PENNSYLVANIA.

The Trustees of the University of Pennsylvania have elected—Dr. George A. Piersol, Professor of Anatomy; Dr. Harrison Allen, Professor of Comparative Anatomy; Dr. John B. Deaver, Assistant Professor of Applied Anatomy; Dr. Edward Martin, Clinical Professor of Genito-urinary Surgery; and Dr. Holmes, Demonstrator of Anatomy.

THE LEHIGH VALLEY MEDICAL ASSOCIATION.

The eleventh annual meeting of the Lehigh Valley Medical Association will be held at the Mansion House, Mauch Chunk, Pa., on Thursday, June 25, 1891.

During the morning business will be transacted and papers read. At 3 P. M. the Society will take in an excursion on the "Switch Back."

UNIVERSITY OF BUDA-PESTH.

A festal commemoration of the 111th anniversary of the University of Buda-Pesth was held on May 12th.

Prof. Koranyi on the 14th inst., celebrated the twenty-fifth anniversary of his appointment as Professor, and received over 200 congratulatory telegrams.

The Medical Society has decided to build itself a house which will probably cost about $20,000.

FOOT-BALL CASUALTIES.

The last foot-ball season in England has been noted for the casualties recorded. Among the injuries noted in the Lancet, which ended fatally are, asphyxia, caused by paralysis of the muscles of respiration, acute peritonitis, injury to the brain, rupture of the intestine, rupture of the right kidney and abdominal injuries. Is it not time that this game should be so modified as to relieve it of the unnecessary dangers now attending it?

WHO OWNS THE PRESCRIPTION?

The *British Medical Journal* says that the question of the ownership of prescriptions has been settled by law in New York, Massachusetts, and a few other States. In all the cases it has been decided that the druggist is the owner of the prescription. The following is the text of a judicial pronouncement lately delivered on the subject: "The question before the Court appears to be simple indeed. A patient applies to a physician and receives from him certain advice for which he tenders a fee. The physician hands a piece of paper to the patient, purporting to be a written order for certain goods, called drugs, which order is filled by a merchant or apothecary. The payment of the fee and the delivery of the goods or drugs terminates the verbal contract, and the druggist keeps the prescription as an evidence that the contract has been fulfilled so far as he is concerned. The druggist can, if he so please, on his own responsibility renew the drugs, for he is but a merchant, and has a perfect right to sell drugs to anyone and in any shape. He need not keep the prescription, nor is he bound to give a copy; but should error occur, he has no protection in case of

suit." It is said that some time ago a decision in the same sense was given by the judge of a court in Berlin.

The *Journal* adds in comment on the above: "The opinion here quoted does not seem to be sound; the patient receives the prescription in return for the fee which he gives to the physician, but he is under no obligation to give up the prescription to the druggist. He is bound to show it to him, or else he cannot get the drugs he wants, but the document belongs to the patient, who could, if he choose, enforce its return by action. A publisher might as well claim to keep an author's manuscript as evidence that he had correctly printed it, as a druggist to keep the prescription as evidence that he had fulfilled his contract to supply the drugs ordered of him. Such a claim on the part of a tradesman against his customer is not recognized as valid by English law, whatever may be laid down by the courts of other countries."

In a paper recently read by Mr. Joseph England, before the Philadelphia College of Pharmacy, this question of ownership was discussed, the writer taking decided ground in favor of the druggist being owner of the prescription. He cited a long legal opinion furnished by an experienced lawyer, Mr. R. C. McMurtrie, in support of his view.

"If the patient is the owner," says Mr. McMurtrie, "he may at any time within six years demand the paper, and if it is not surrendered, sue as for a tortious conversion of his property. If he can't do this he certainly has no title." Various instances are cited also showing the necessity to the druggist of owning and keeping the prescriptions.—*Med. Rec.*

JOHNSTOWN CORRESPONDENTS ASSOCIATION.

THE representatives of the great daily papers who worked in Johnstown during the days following the dreadful flood of May 31, 1889, have formed an organization known as the Johnstown Correspondent's Association. On the anniversary of the great disaster they meet and renew the friendships formed then, and recount the stirring scenes of those eventful months. This year they met in Johnstown and were delightfully entertained by the Cambria County Medical Society and the citizens generally. There were present representatives of the New York *World, Herald, Times* and *Mail and Express*, of the Philadelphia *Times, Record, Press, Inquirer* and *Public Ledger*, and of all the Pittsburgh papers. The entire party numbered about seventy-five persons. The different parties arrived in special cars on Saturday, May 30, and were at once taken in charge by a committee of citizens and by the following medical men: Drs. A. N. Wakefield, W. B. Towman, L. N. Mayer, G. W. Wagoner and E. S. Miller. The party were provided with carriages and driven to all the points of interest in the historic valley. The rooms of the Medical Society were used as the headquarters of the party and had been handsomely decorated for the purpose. An elegant lunch was served, during the entire day, in the rooms, and all enjoyed this feature of the entertainment very much. The members of the Medical Society turned out in full force and took special pride in receiving the guests at their rooms because they had a magnificent library to show them. The large and valuable collection of medical and literary works was recently given to the Society by Dr. Joseph M. Toner, of Washington, D. C. It comprises a large portion of a collection, to the acquirement of which this distinguished and learned gentleman has devoted his life and fortune, hence one can readily fancy how valuable it must be. There are nearly 5,000 titles, and among them are all the famous medical works of the last 150 years. Dr. Toner passed his boyhood days in Johnstown and entered upon the study of medicine many years ago, in the office of Dr. John Lowman, who was then, as he is now, one of the most distinguished practitioners of medicine and surgery in Western Pennsylvania. Dr. Toner has never forgotten the early home or his old preceptor, and now in his declining years he has manifested his affection by enriching the medical profession of the community where he first imbibed medical knowledge. The Toner Library contains many volumes which could not be duplicated. The members of the Medical Society are justly proud of the splendid library and the many other articles of interest and value which Dr. Toner has donated to their use, and took very great pleasure in exhibiting their possessions to the visitors. The Toner Library is the first public one established in the city since the flood and was therefore a centre of interest. It is well cared for in one of the principal business blocks of the new city. At the close of their day of sight-seeing the visiting reporters were given a banquet at a hotel, by the citizens, and left the city surprised at the wonderful progress it had made since the flood, and delighted at the elegant manner in which they had been entertained.